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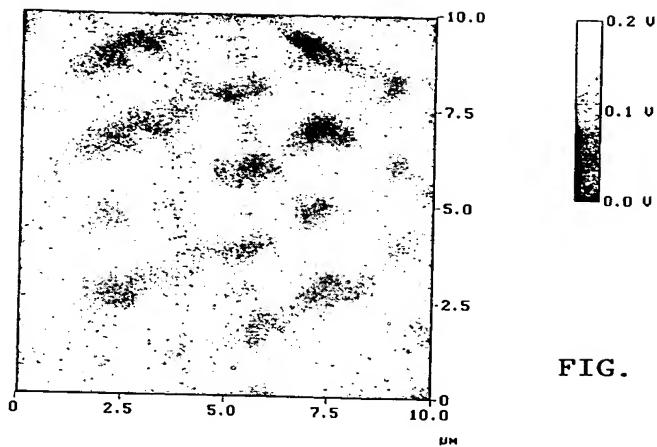


FIG. 1A

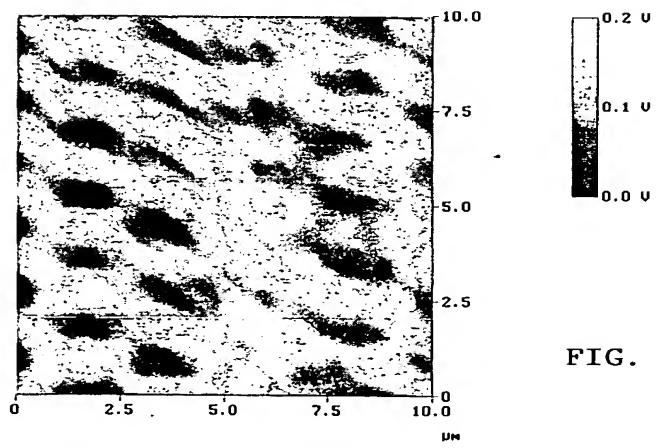


FIG. 1B

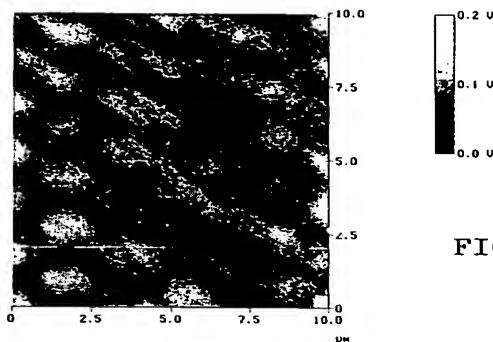


FIG. 2A

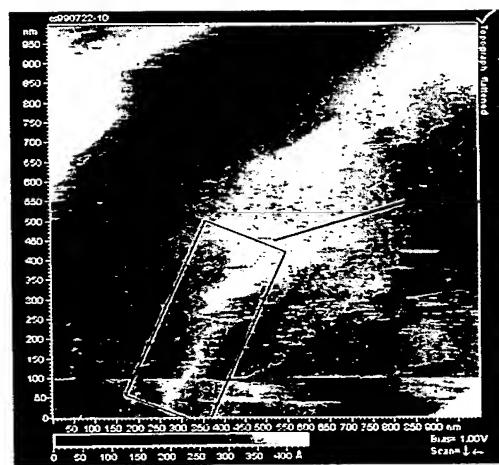


FIG. 2B

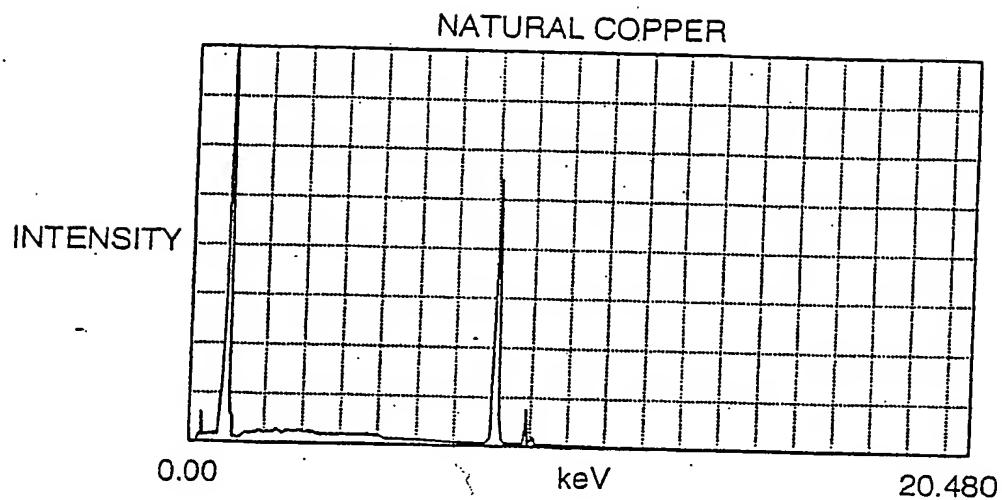


FIG. 3A

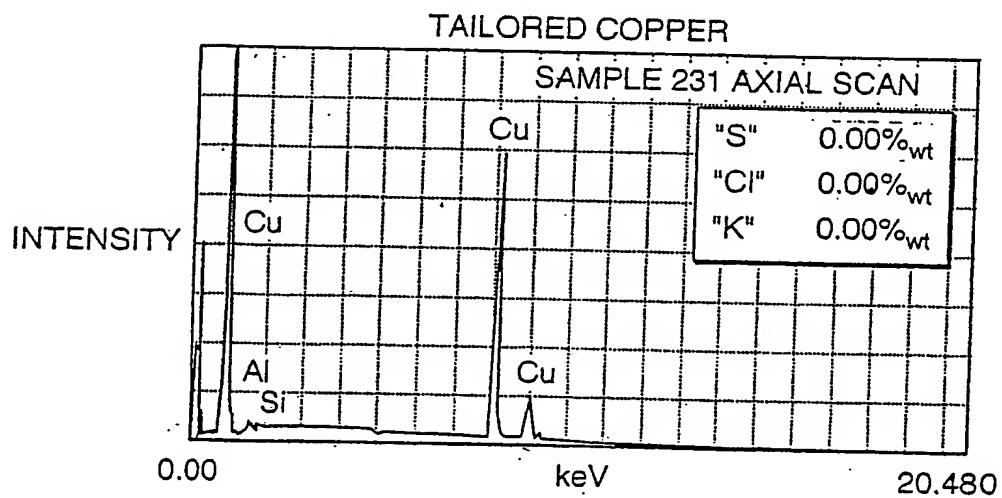


FIG. 3B

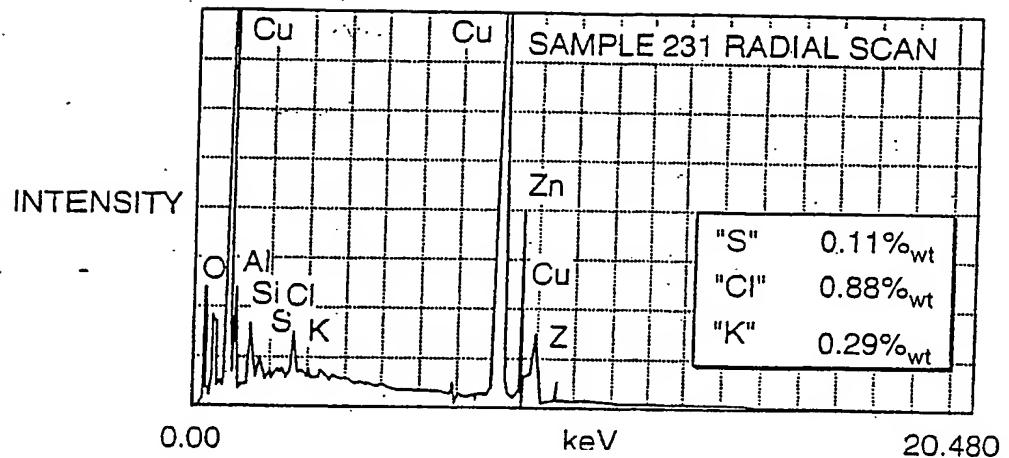


FIG. 4A

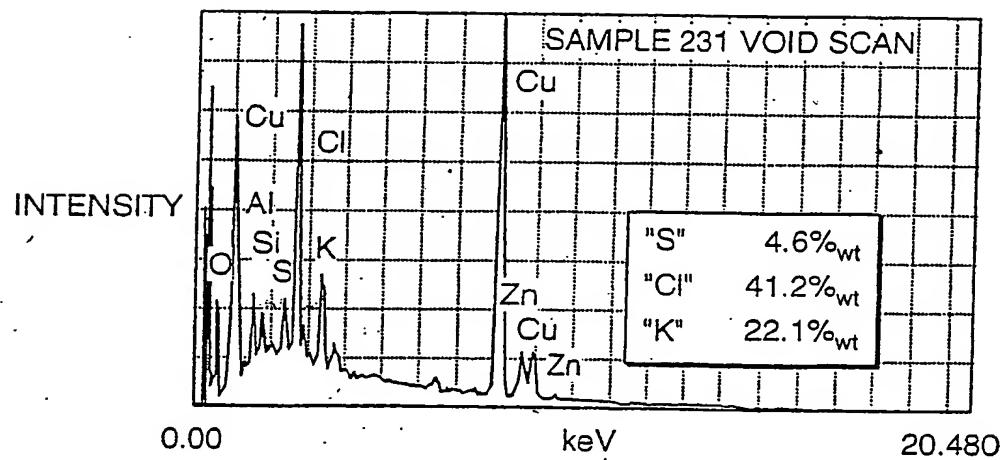
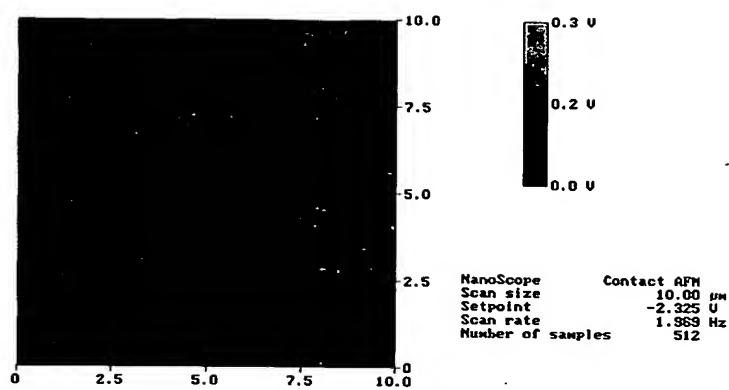


FIG. 4B



P1990722.037

MFM: Sample 231 Void Scan

FIG. 5A

## TAILORED COPPER

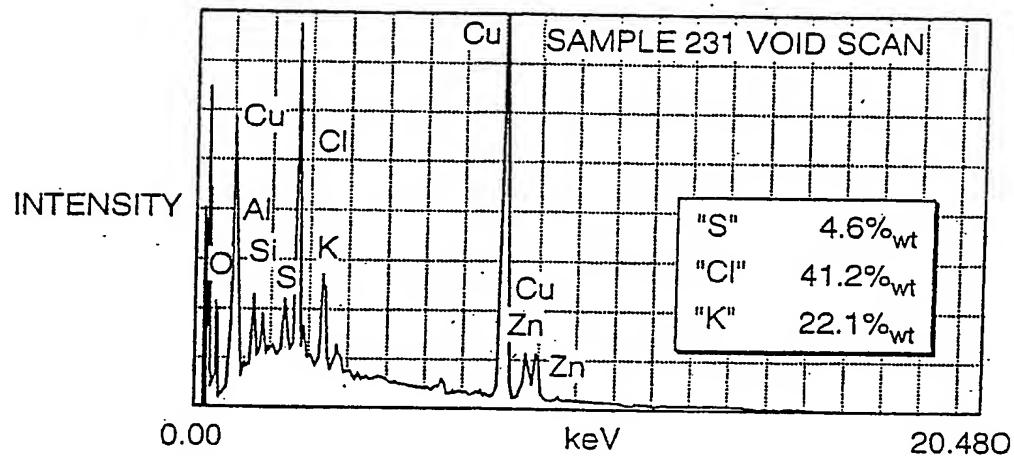


FIG. 5B

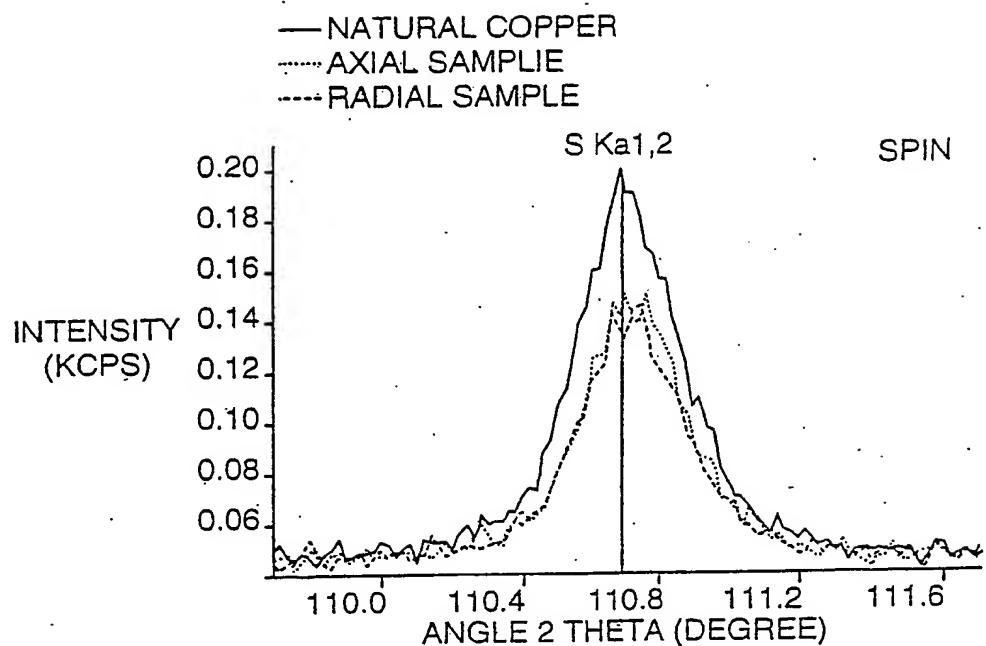


FIG. 6A

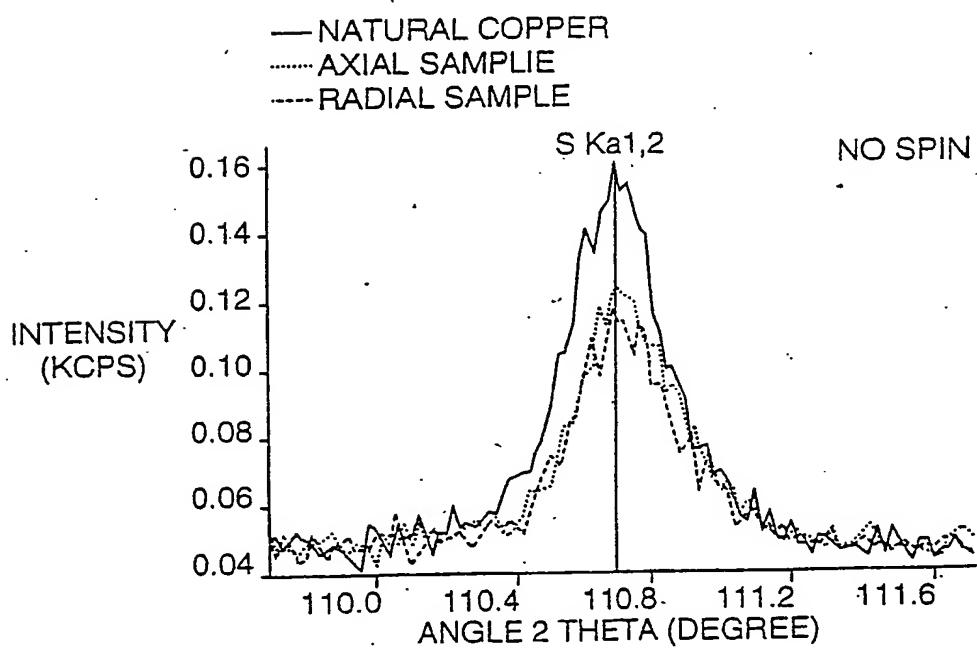


FIG. 6B

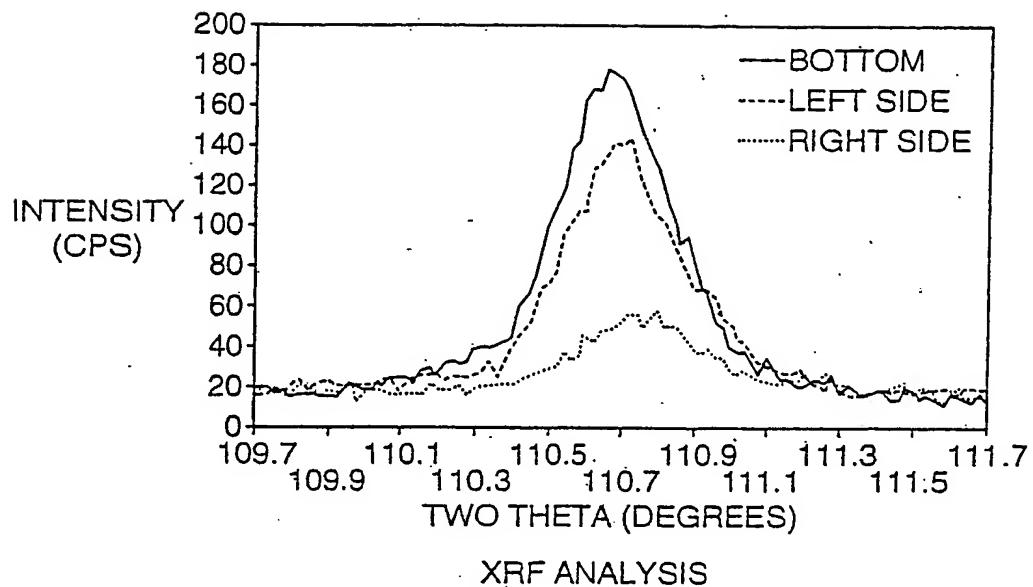


FIG. 7

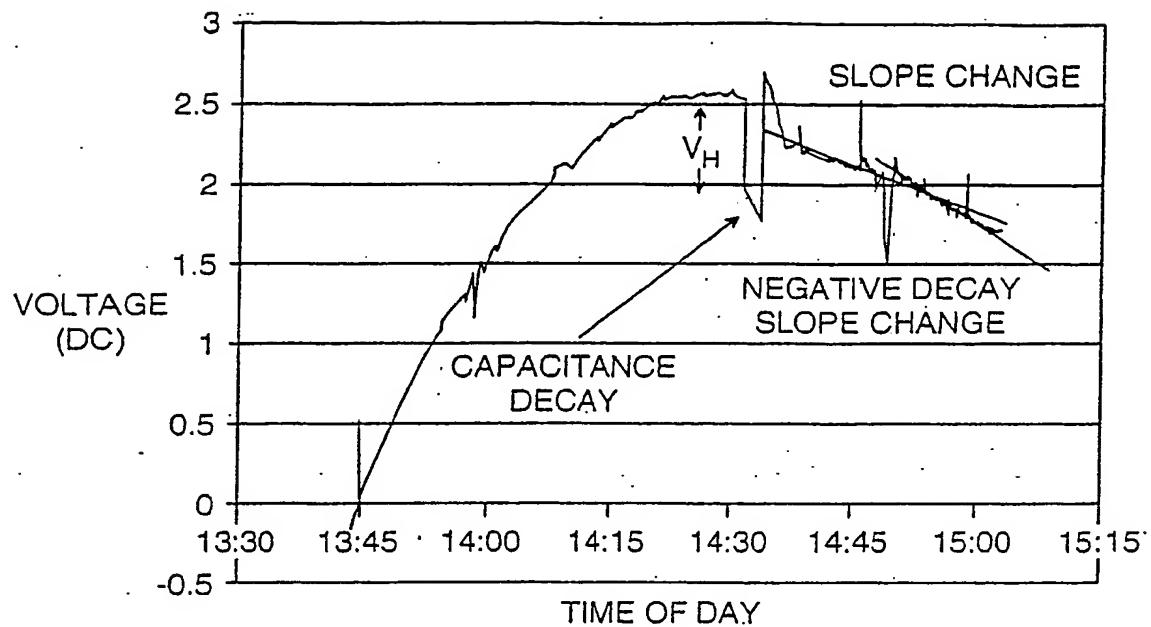


FIG. 8

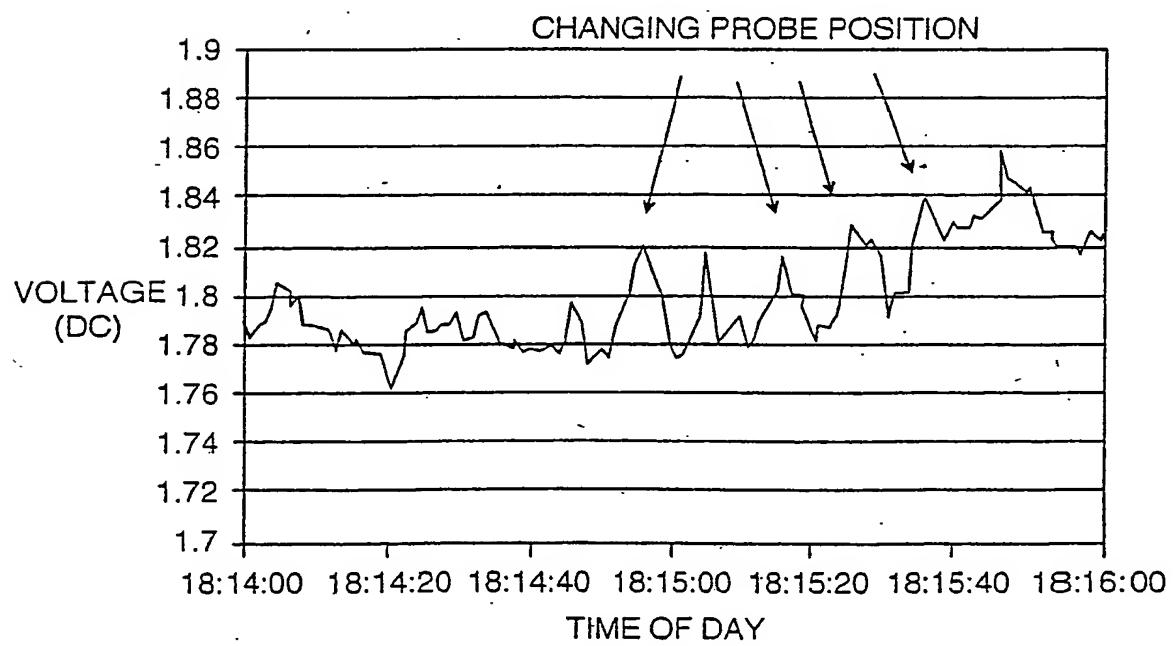


FIG. 9

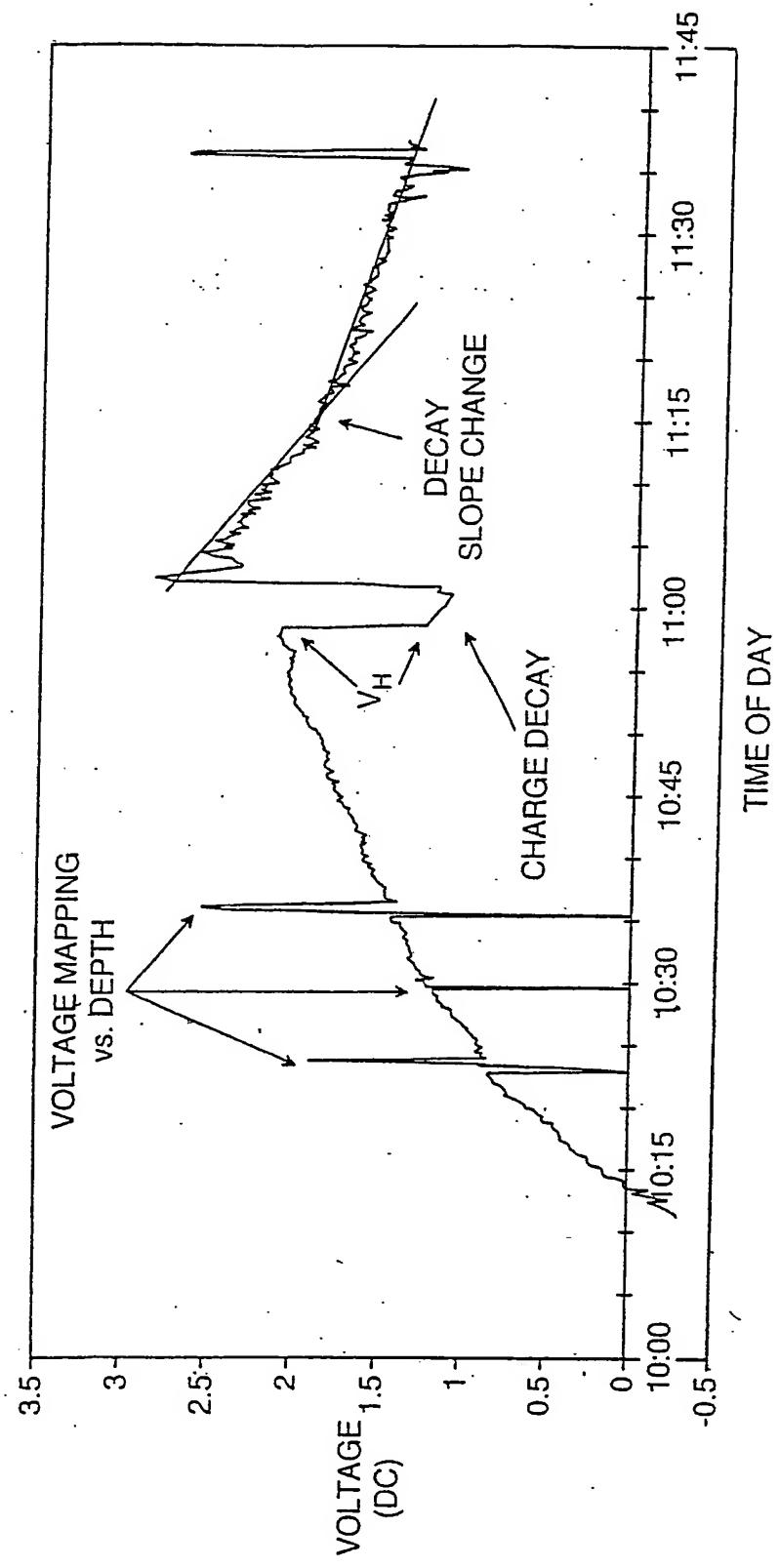


FIG. 10

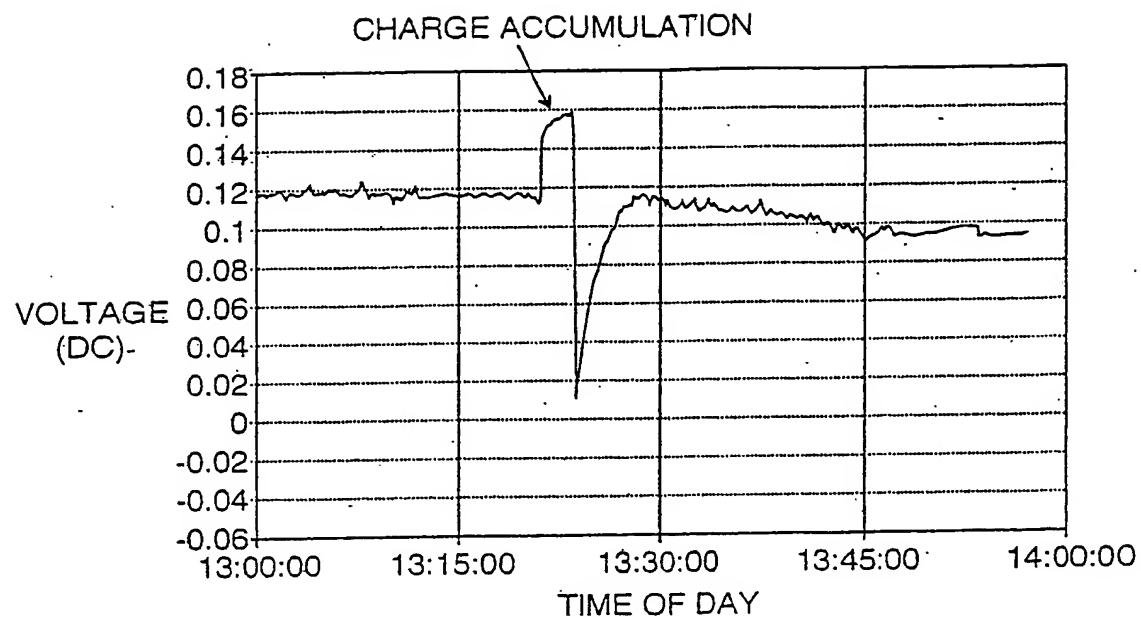


FIG. 11

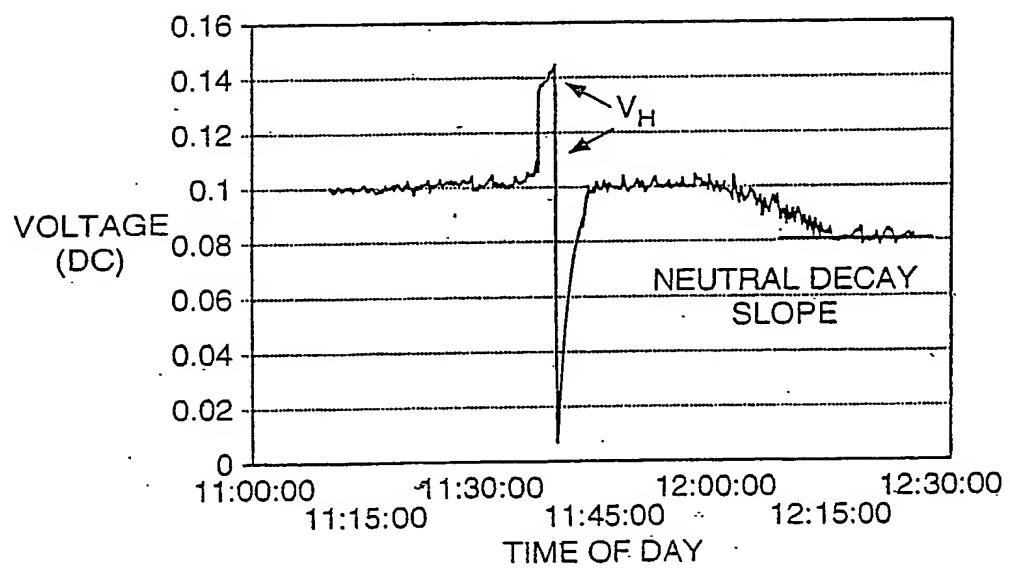


FIG. 12

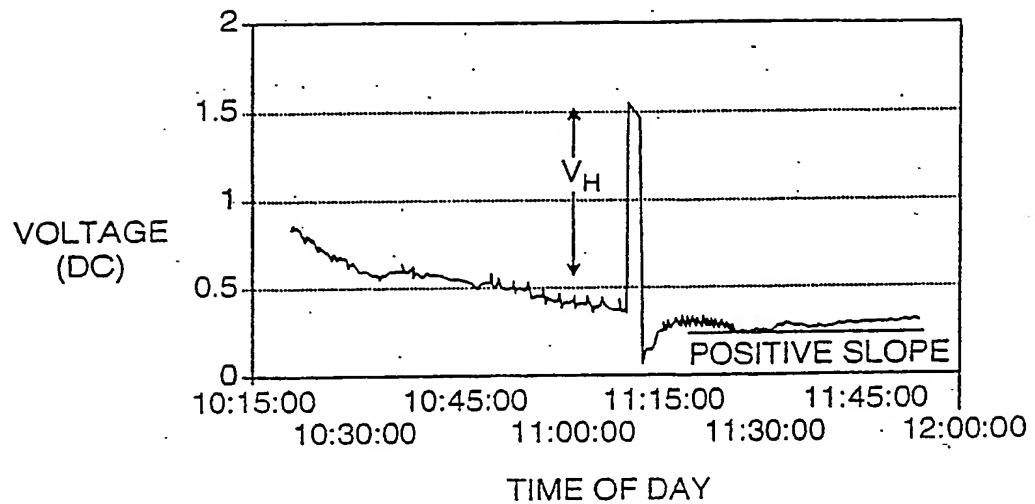


FIG. 13

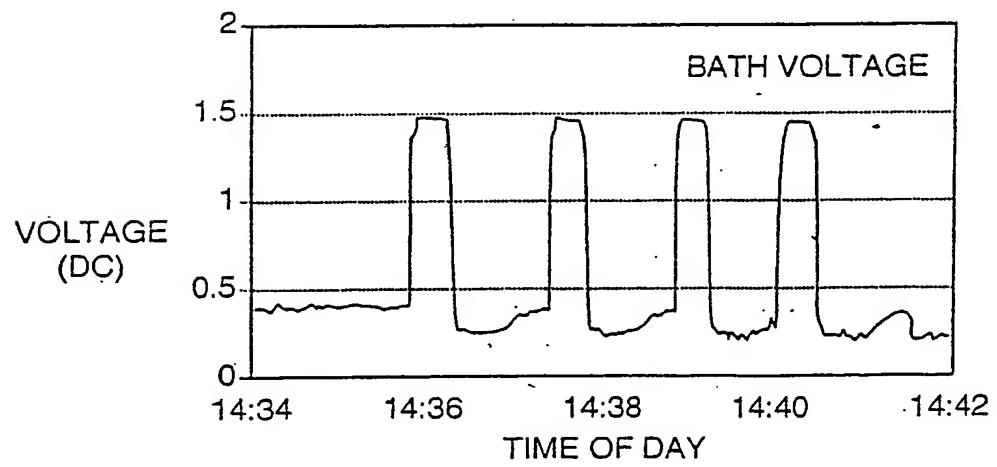


FIG. 14

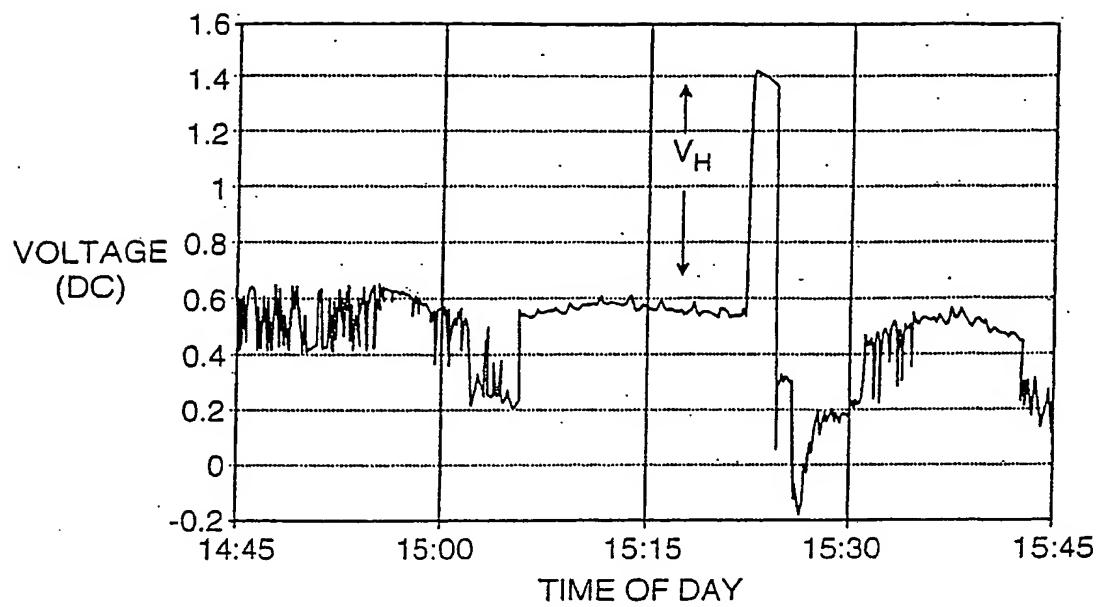


FIG. 15

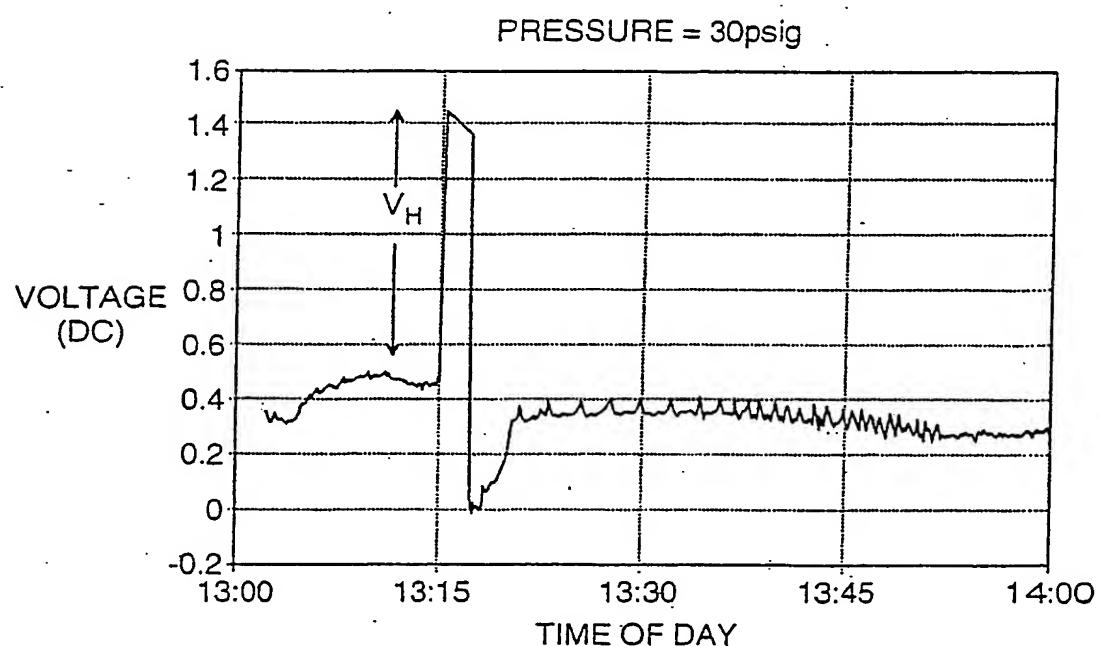


FIG. 16

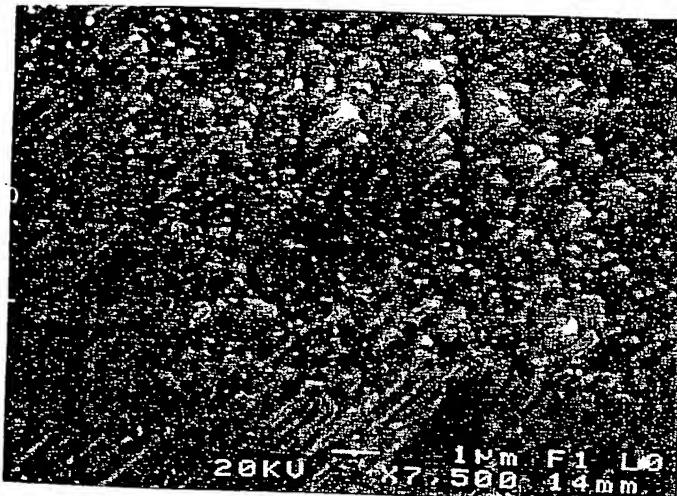


FIG. 17A

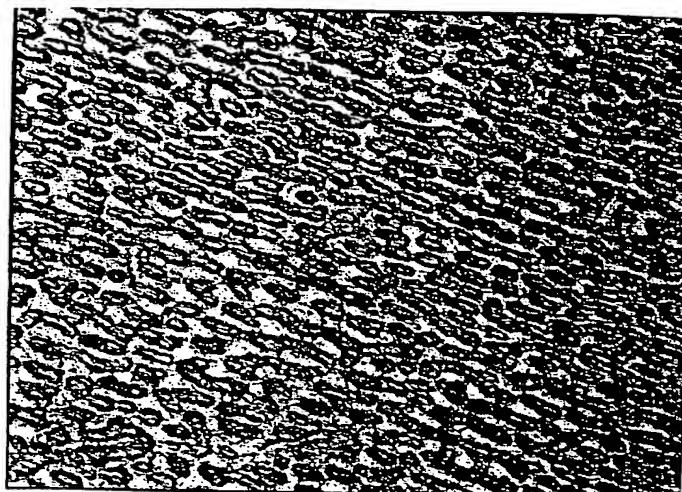


FIG. 17B

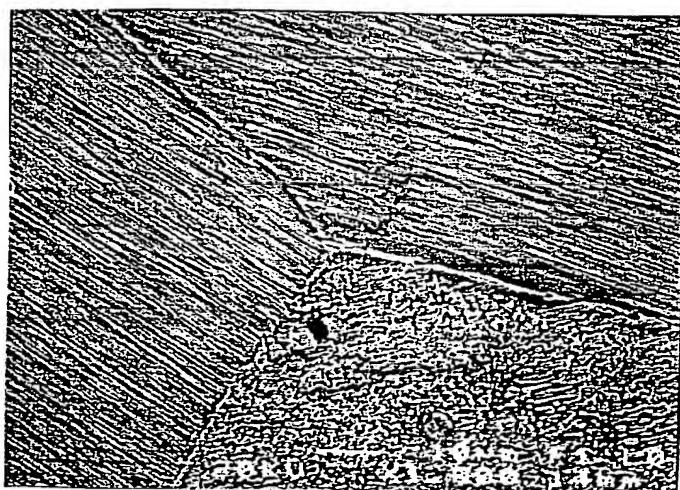


FIG. 17C

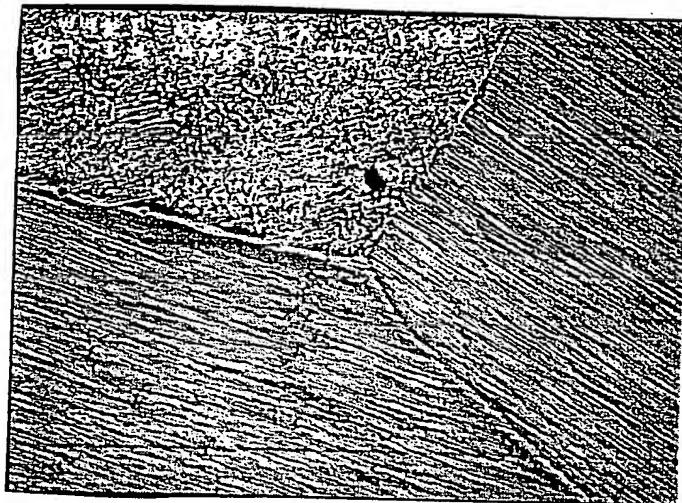


FIG. 18A

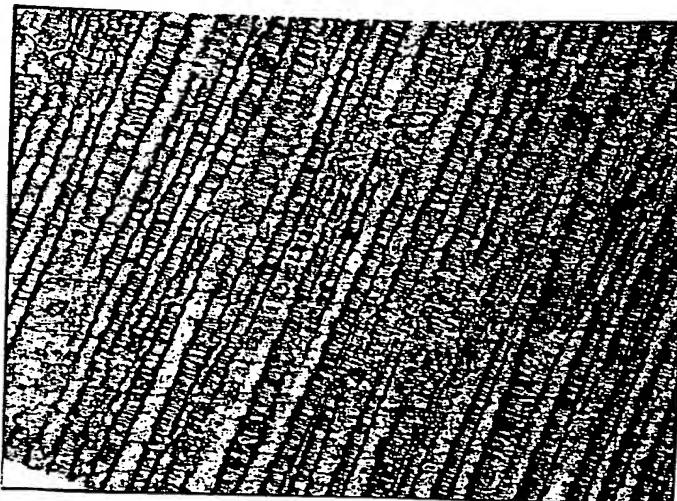


FIG. 18B

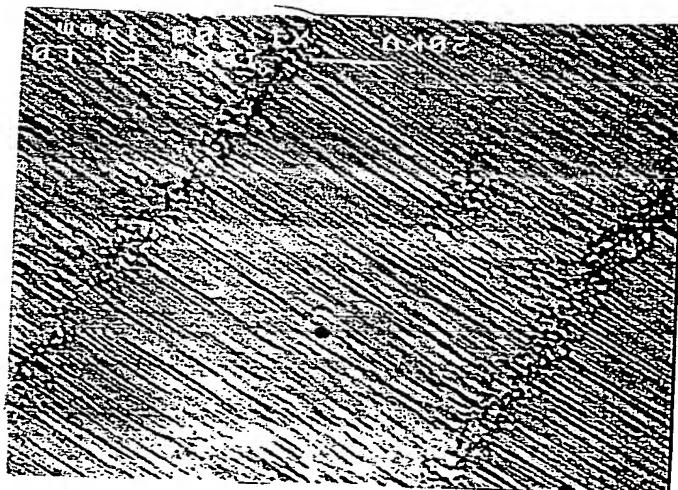


FIG. 18C

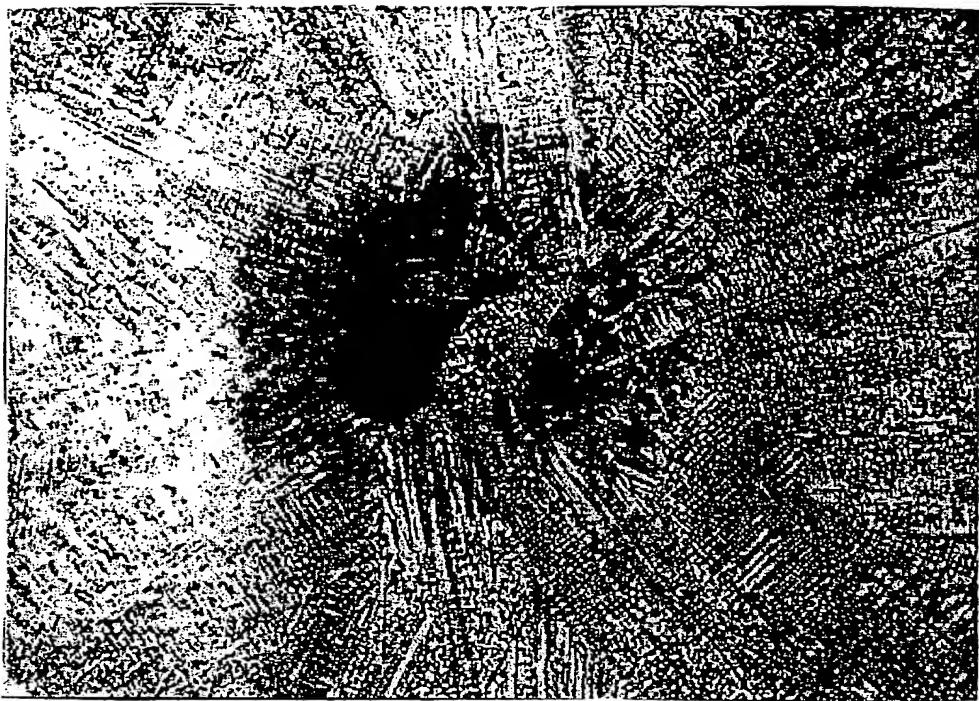


FIG. 19A

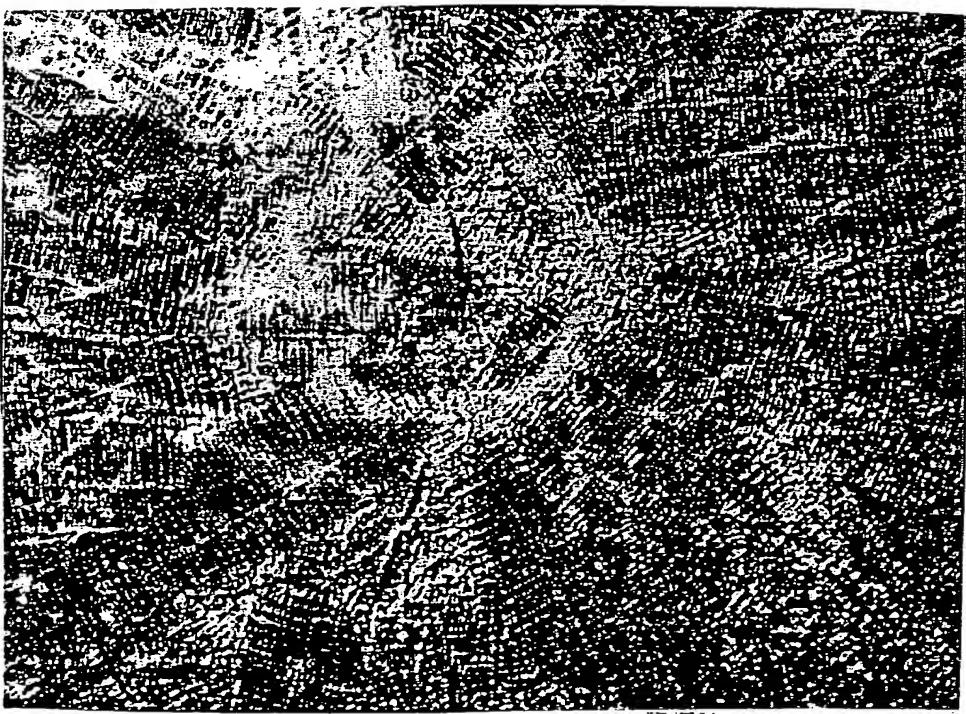


FIG. 19B

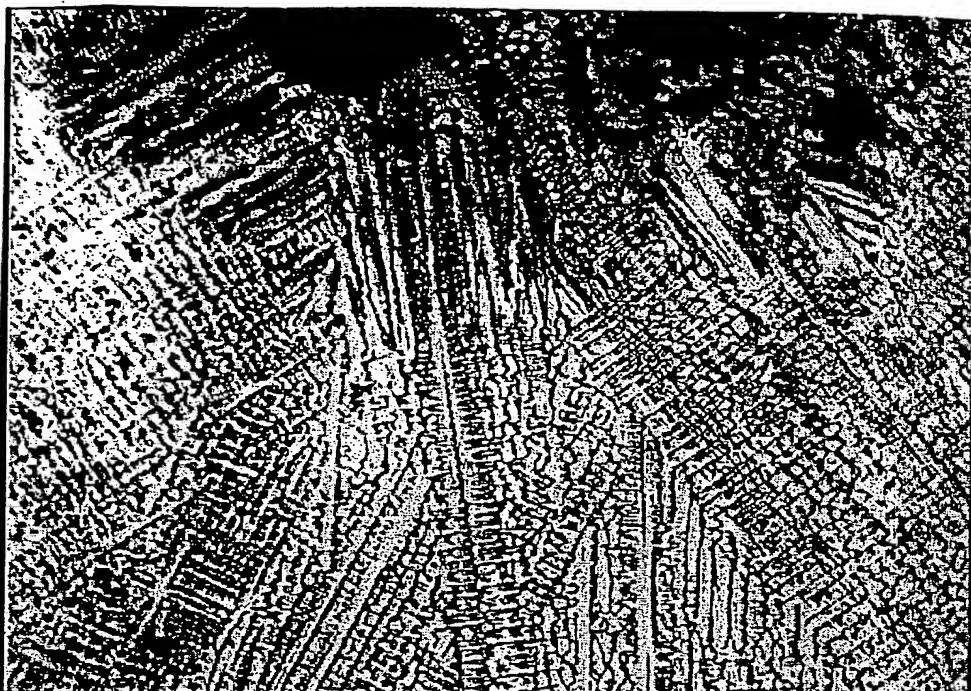


FIG. 20A



FIG. 20B

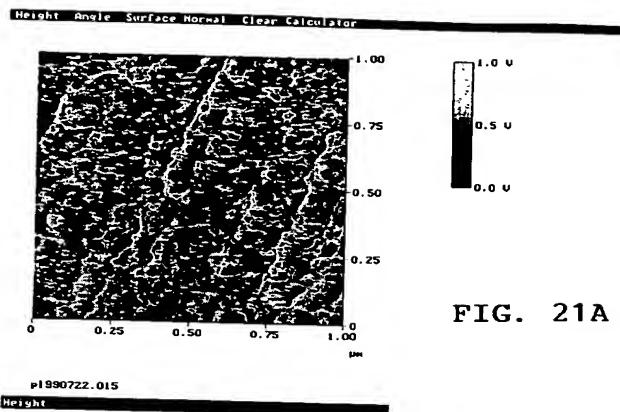


FIG. 21A

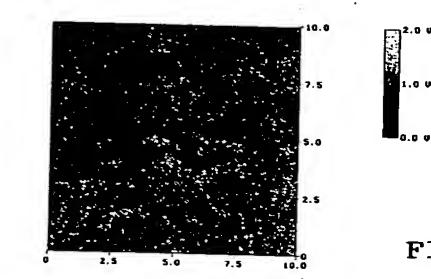


FIG. 21B

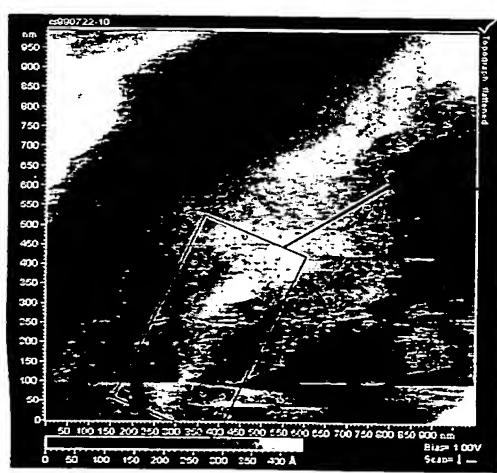


FIG. 21C

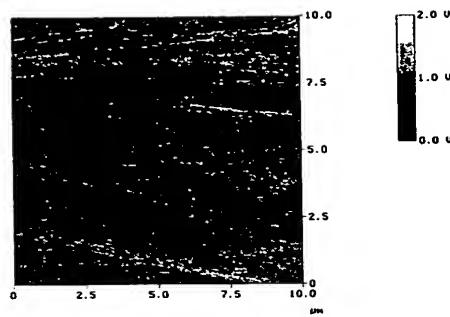


FIG. 22A

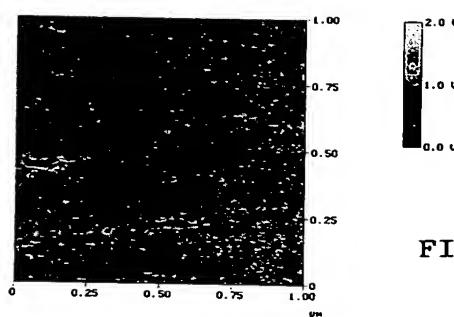


FIG. 22B

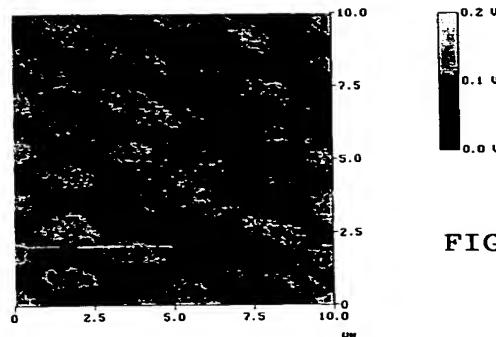
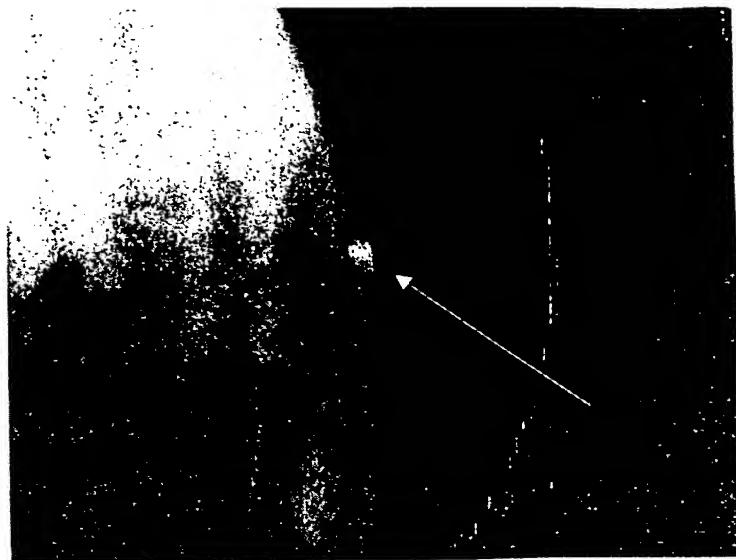


FIG. 22C

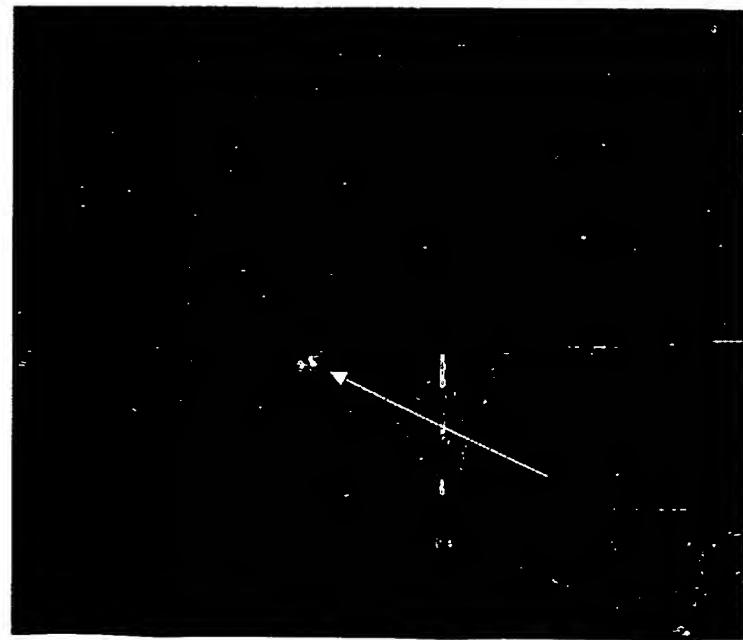
**FIG. 23A**



**FIG. 23B**



**FIG. 23C**



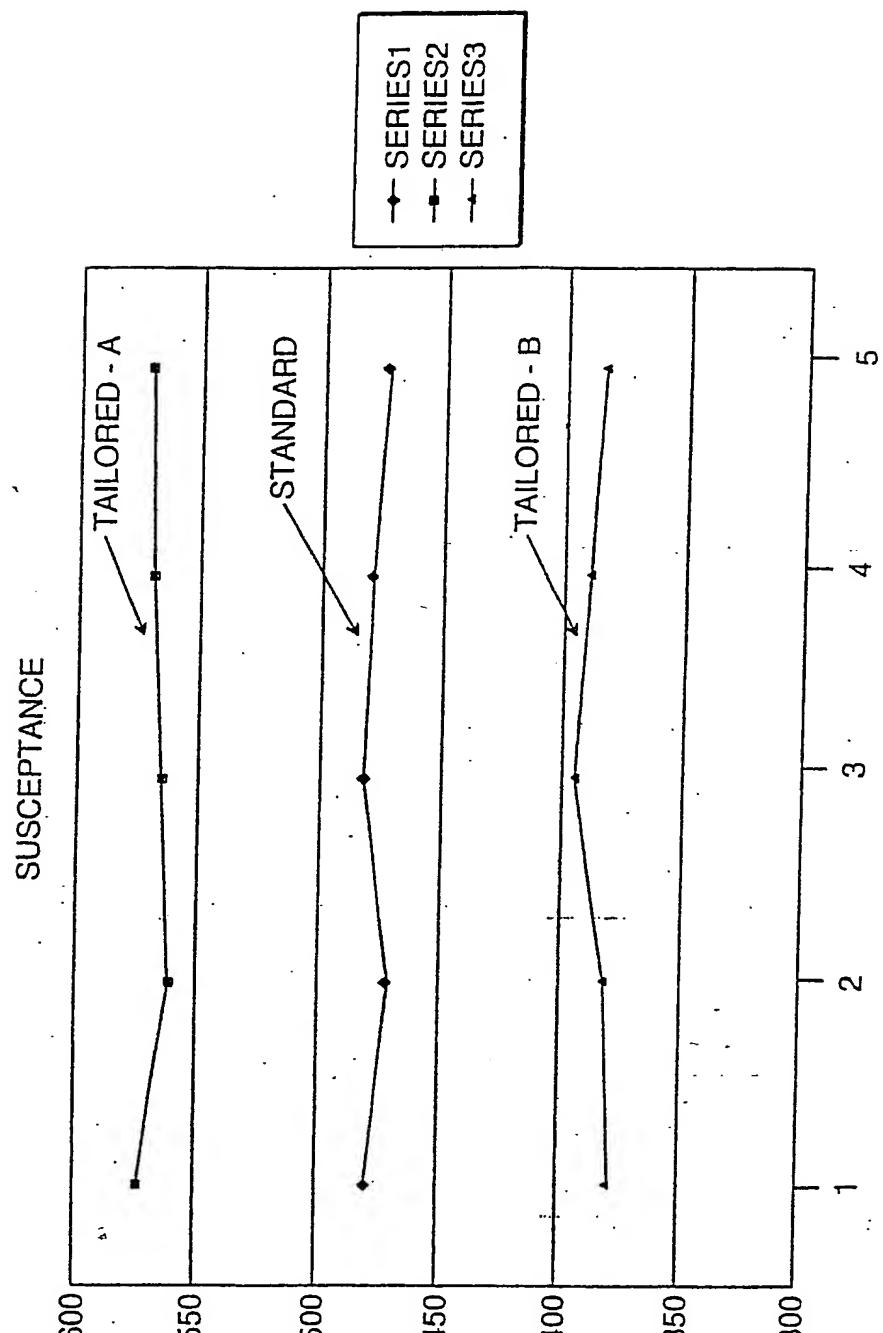


FIG. 24

14-01-01 scans for Copper (LiF220)FPC)

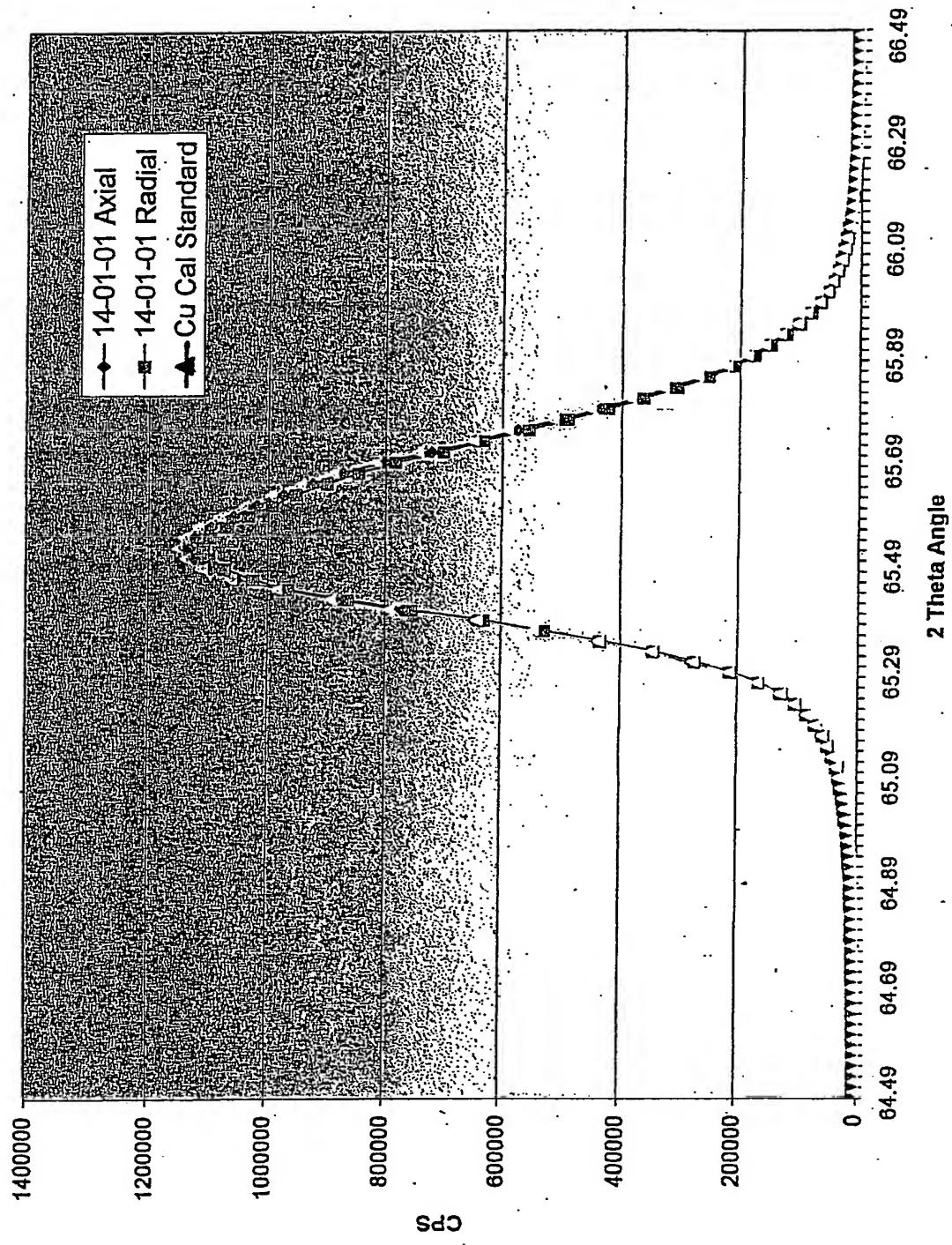


FIG. 25

Al in Copper 14-01-01

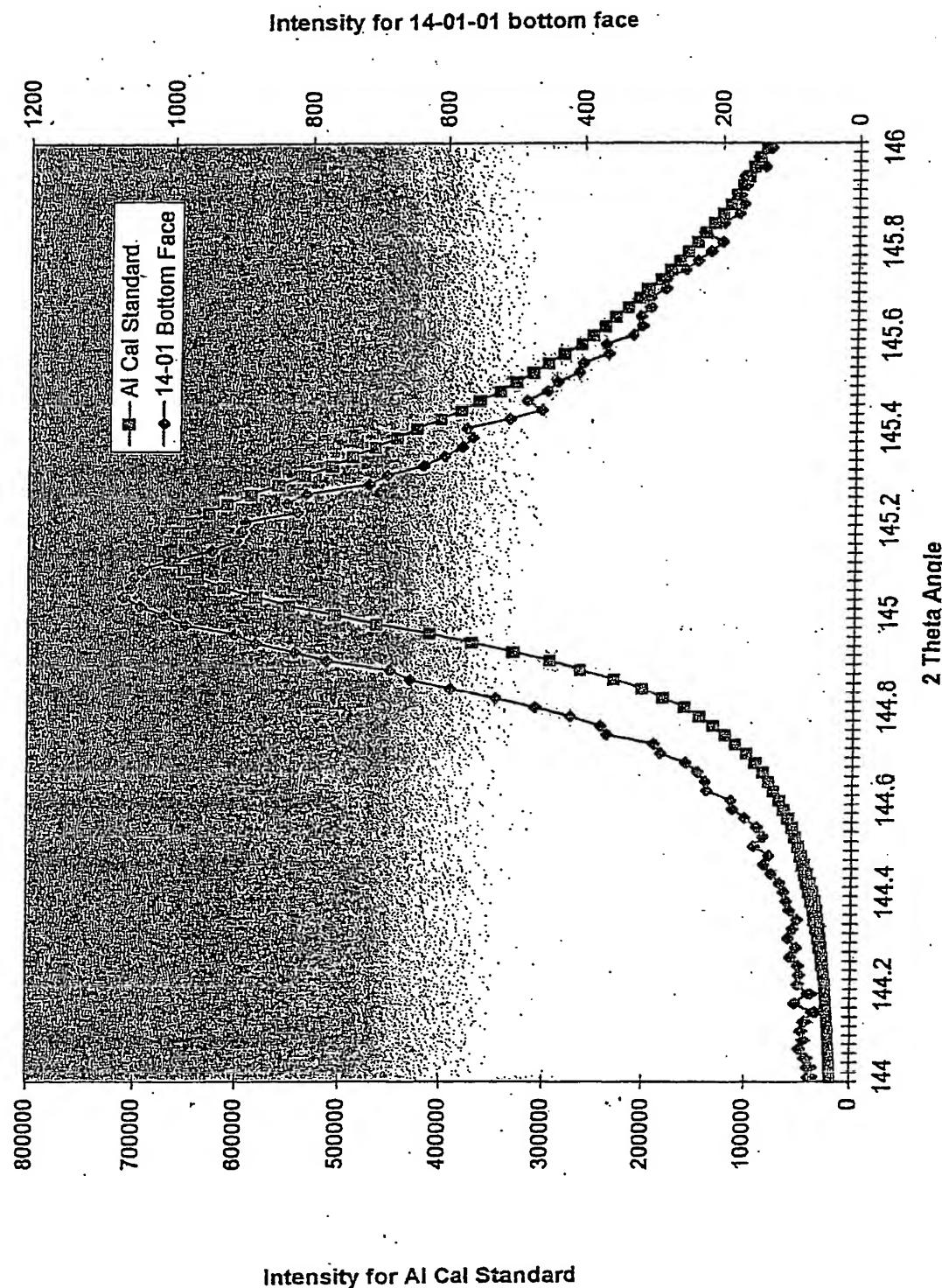


FIG. 26

# Nickel Scans: Nickel Analysis

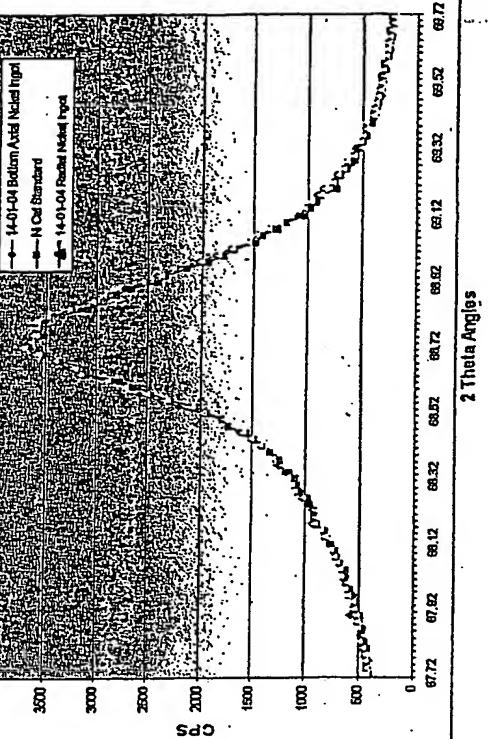
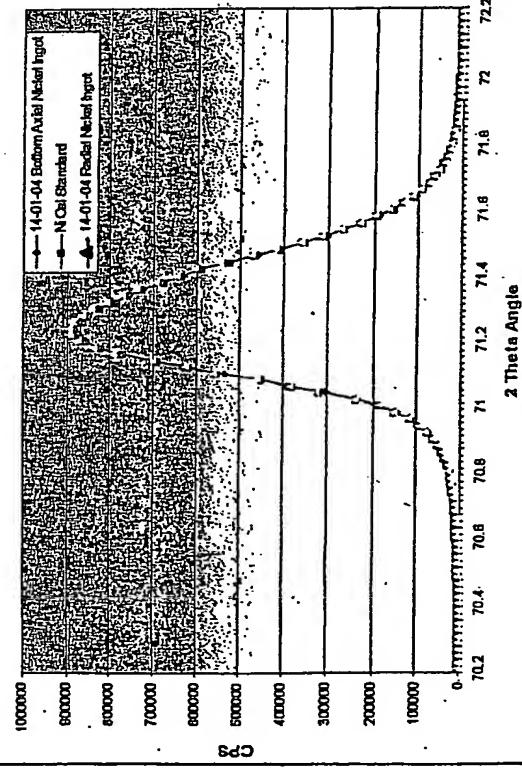


FIG. 27A

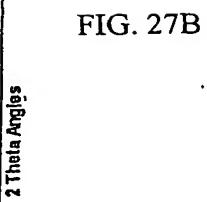


FIG. 27B

# Nickel Scans: Al and Zr

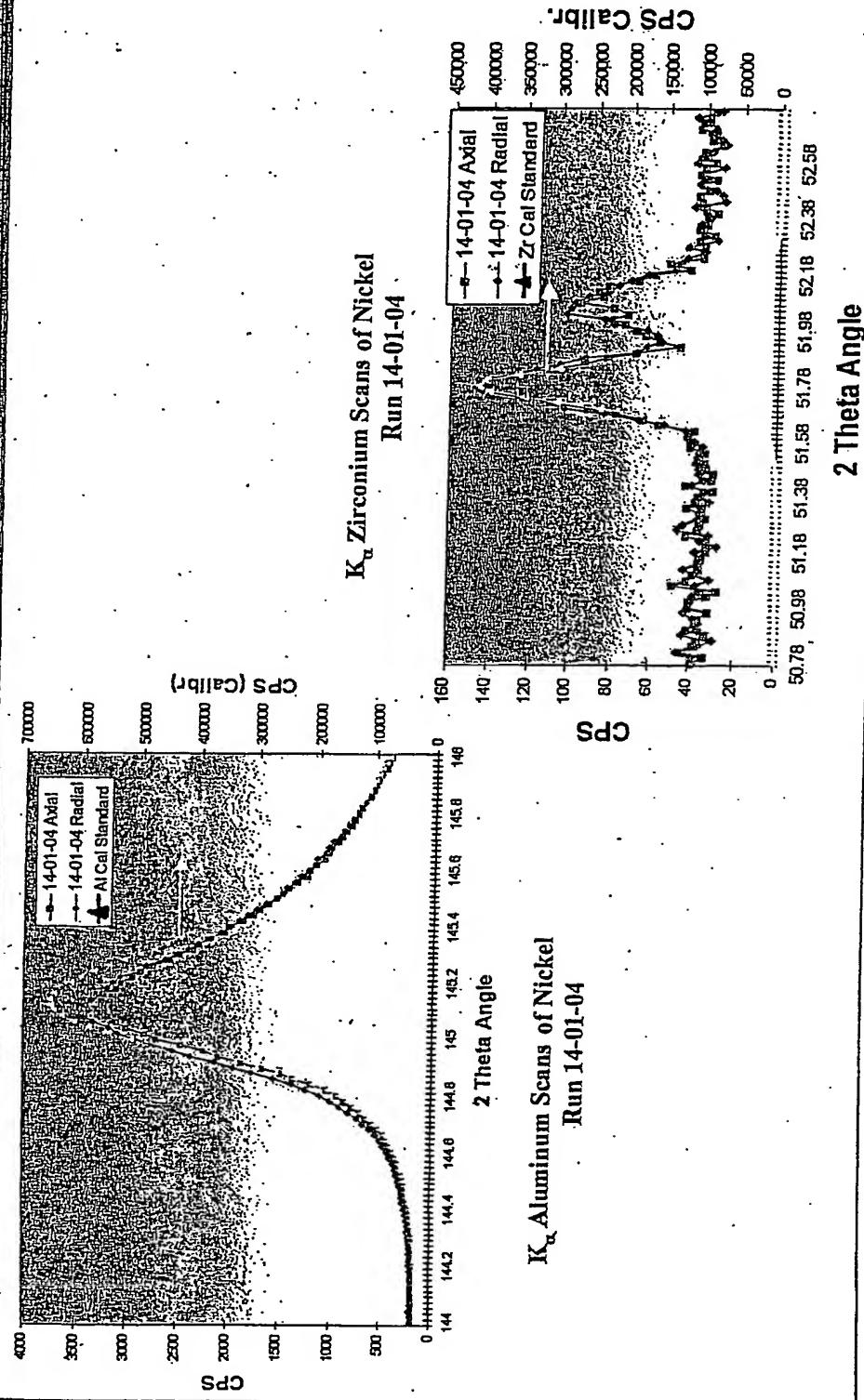


FIG. 28A

FIG. 28B

# Nickel Scans: Sulfur on 6 sides

K<sub>a</sub> Sulfur Scans of Nickel  
Run 14-01-04

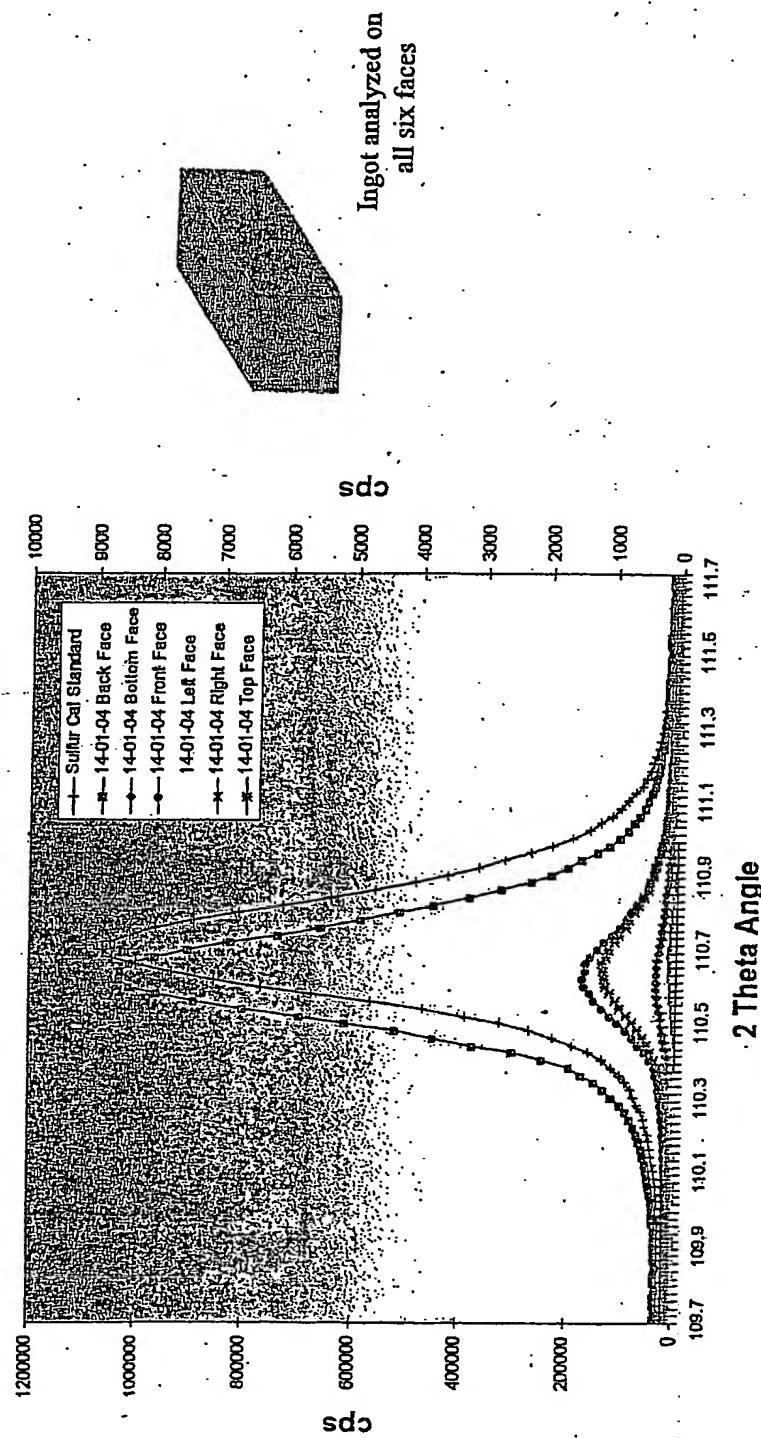


FIG. 29

## Nickel Scams: CI

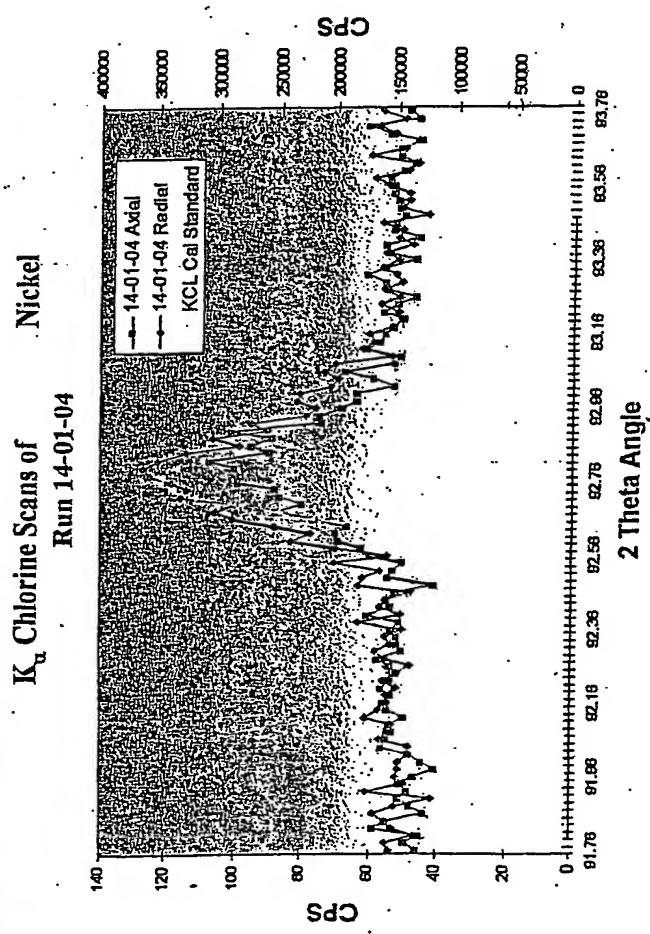
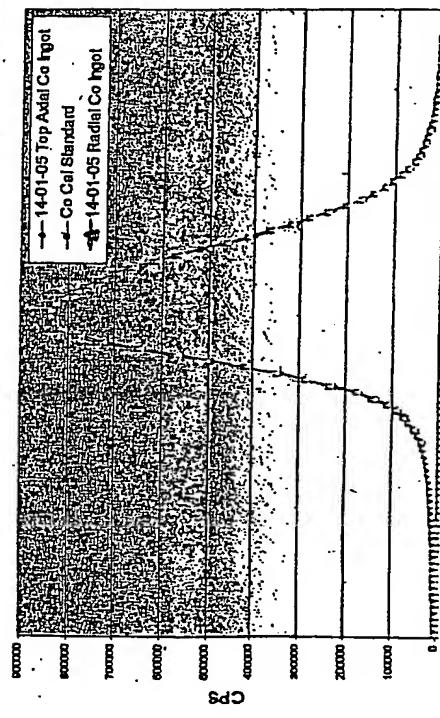
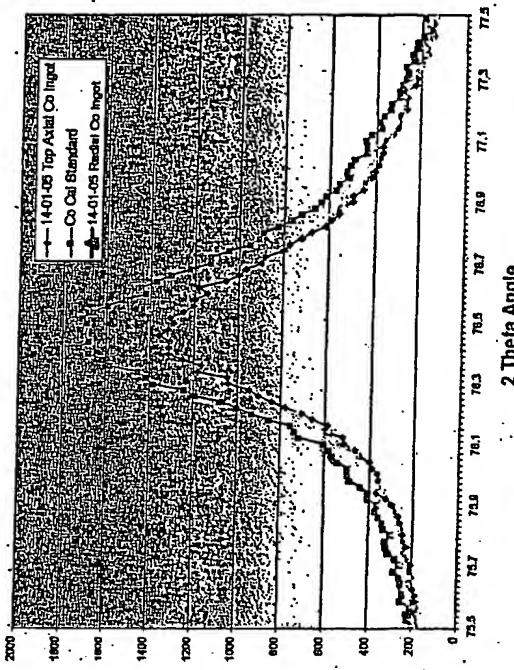


FIG. 30

# Cobalt Scans: Cobalt Analysis



L<sub>α</sub> Cobalt Scans  
Run 14-01-05



K<sub>α</sub> Cobalt Scans  
Run 14-01-05

FIG. 31A

FIG. 31B

## Cobalt Scans: Al and Fe

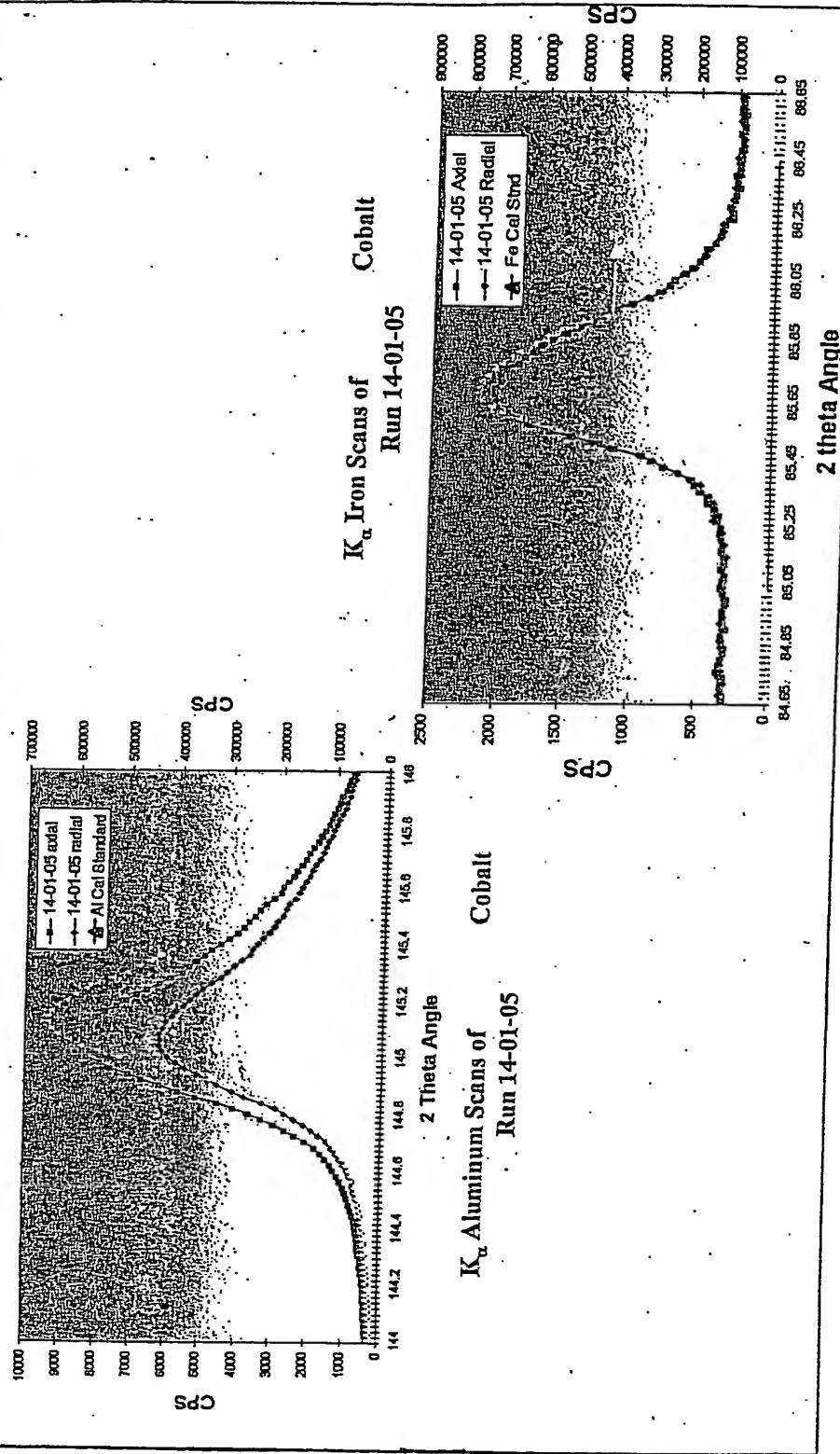


FIG. 32A

FIG. 32B

## Cobalt Scans: Cl and Zr

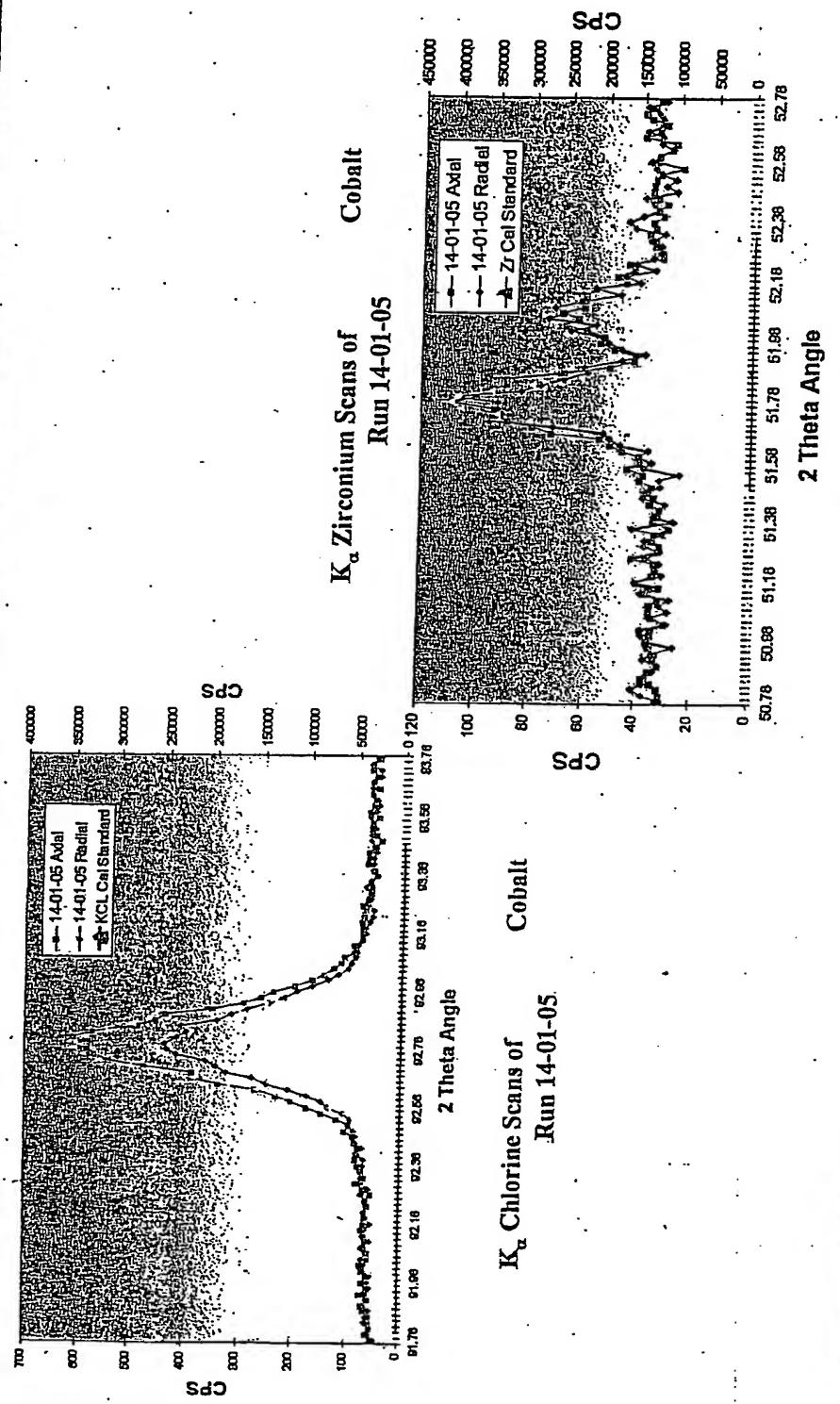


FIG. 33A

FIG. 33B

# Cobalt Scans: Mn

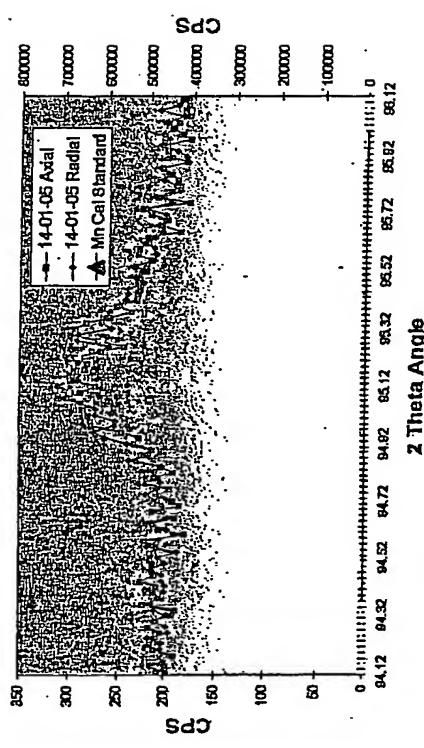


FIG. 34

14-01-06 Cu - Axial and Radial Samples vs Cu Cal Standard (LiF200/FPC)

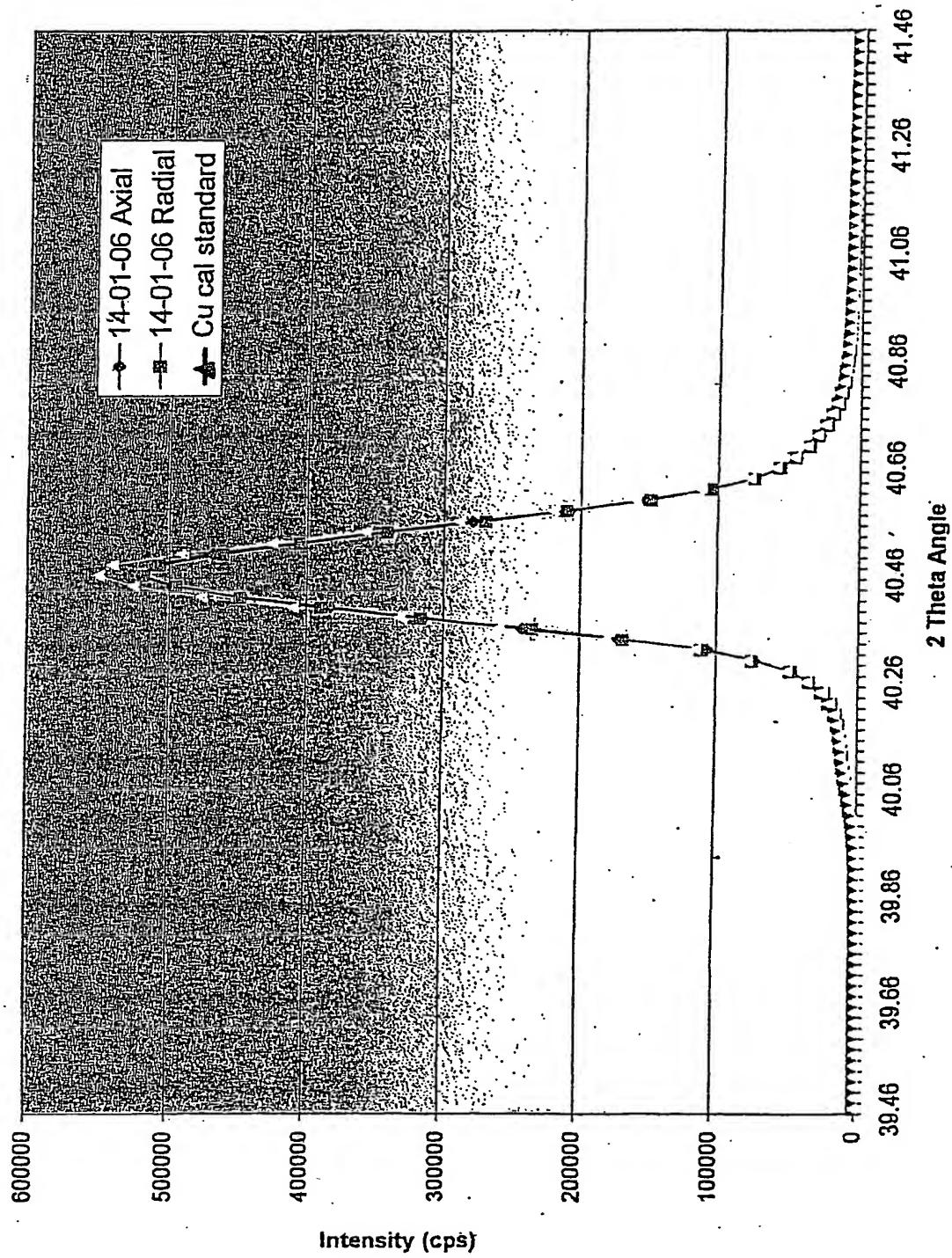


FIG. 35

14-01-06 Au- Axial and Radial Samples vs Au Cal Standard (LiF420/SC)

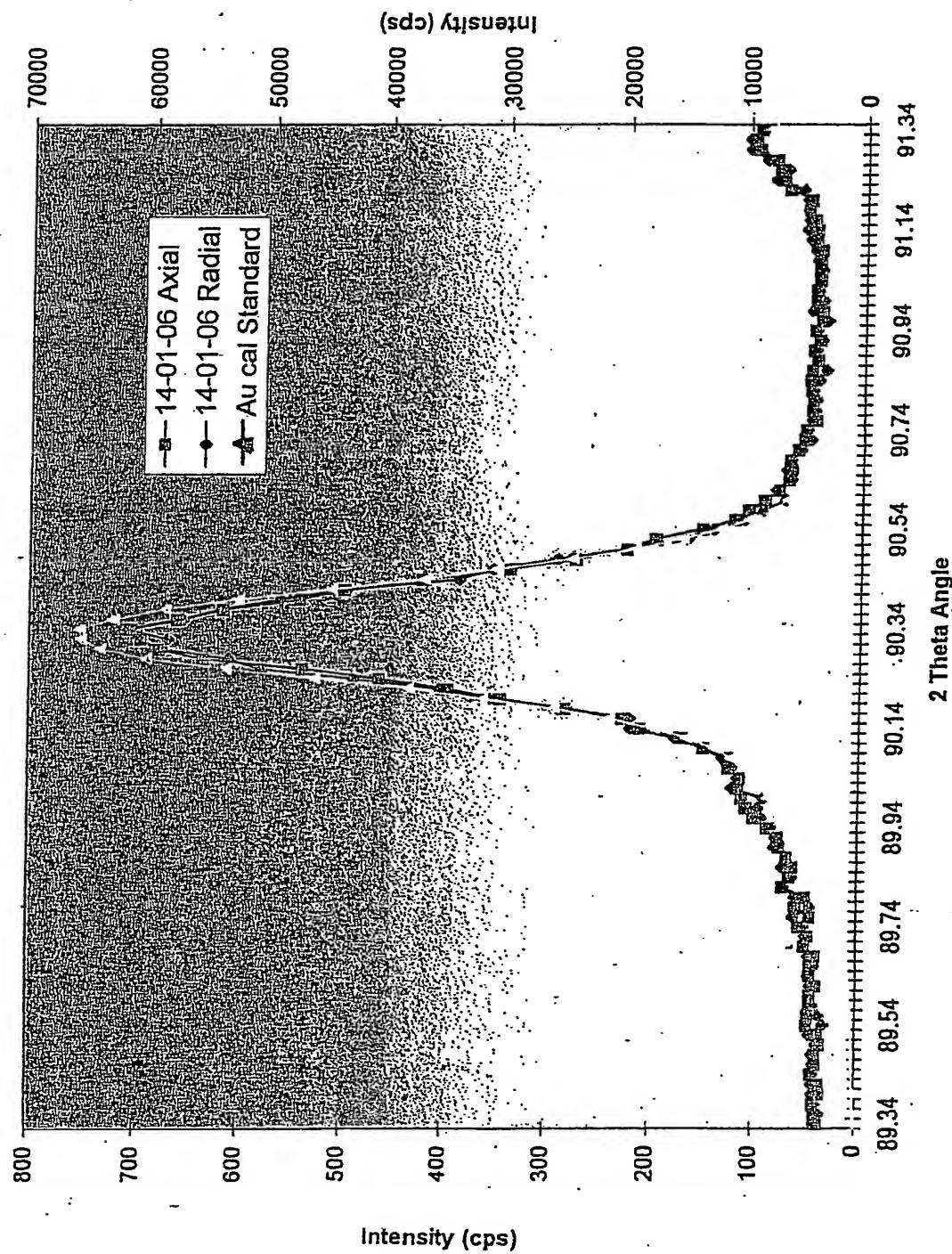


FIG. 36

14-01-06 Ag: Axial and Radial Samples vs Ag Cal Standard (LiF220/SC)

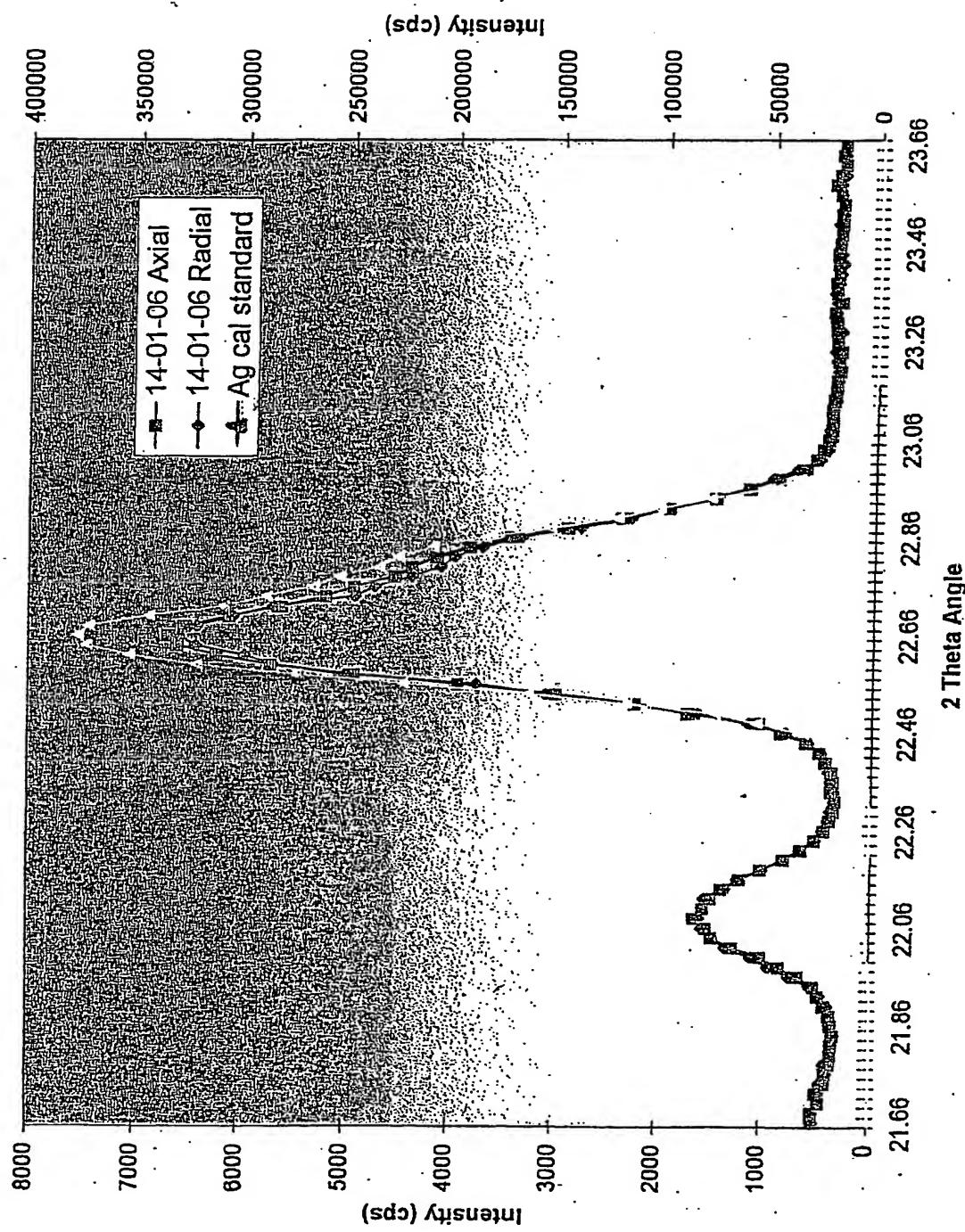


FIG. 37

14-01-07 Sn- Axial and Radial vs Sn Cal Standard

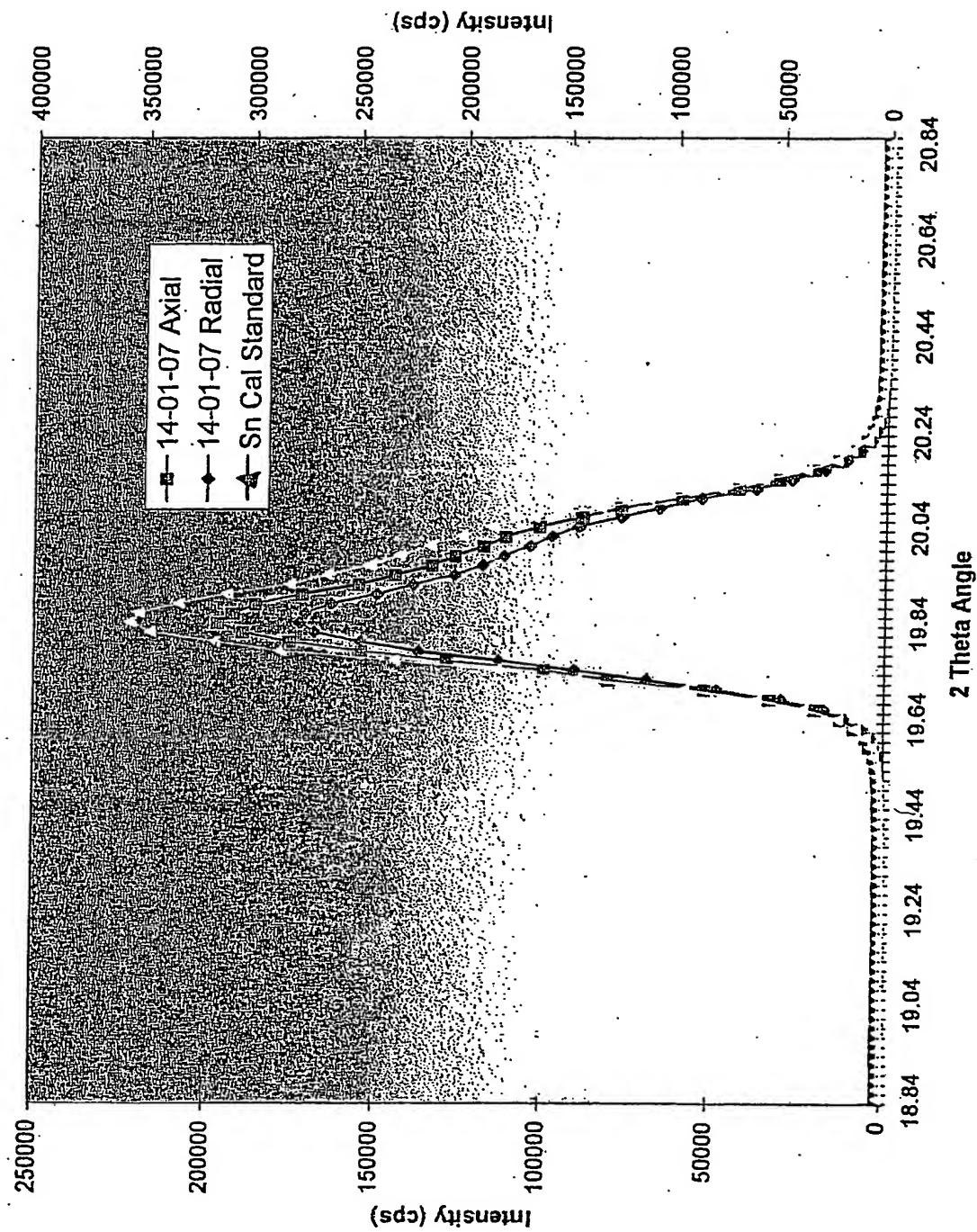


FIG. 38

14-01-07 Zn-- Axial and Radial vs Zn Cal Standard (LiF220/FPC)

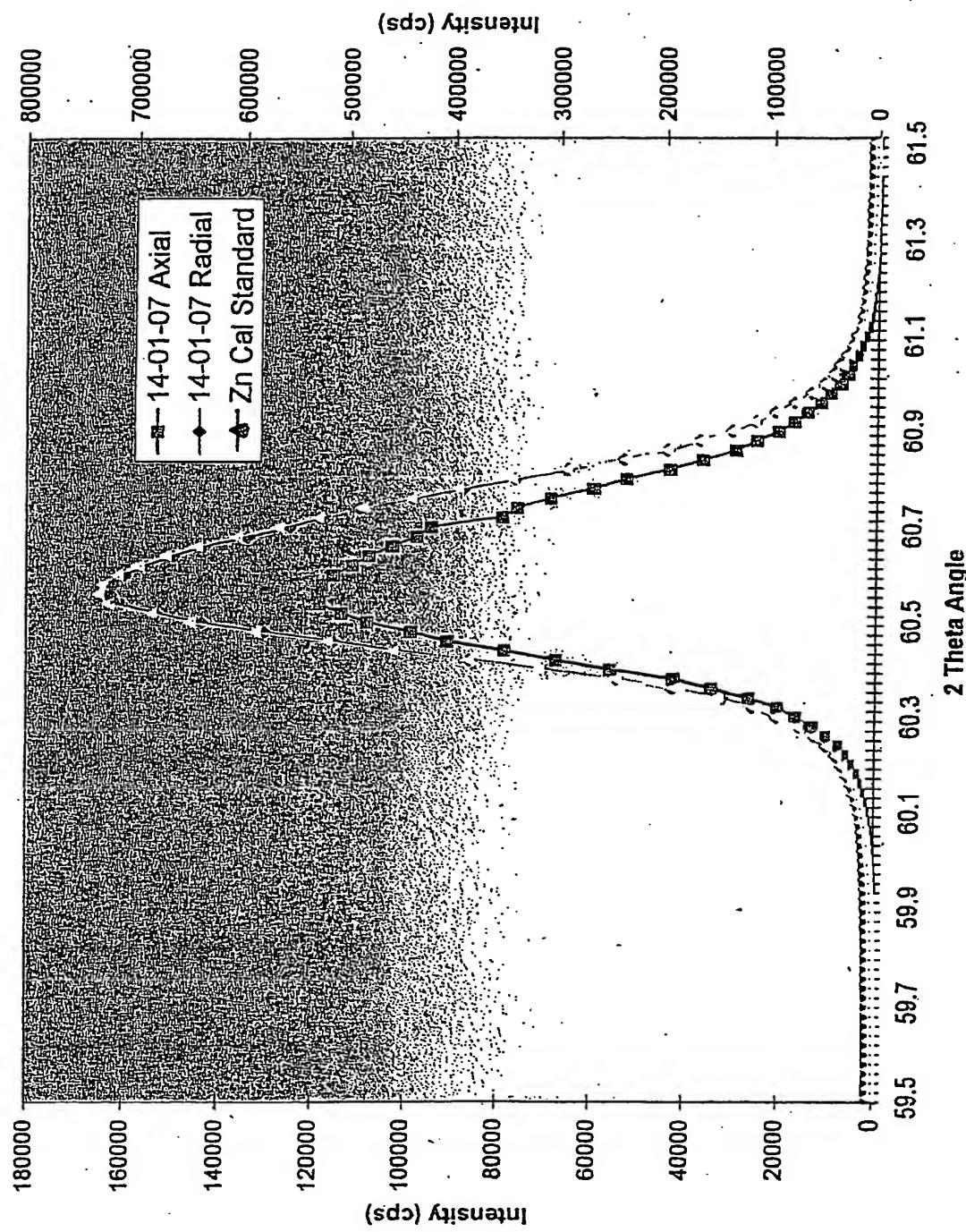


FIG. 39

14-01-07 Pb-Axial and Radial vs Pb Cal Standard

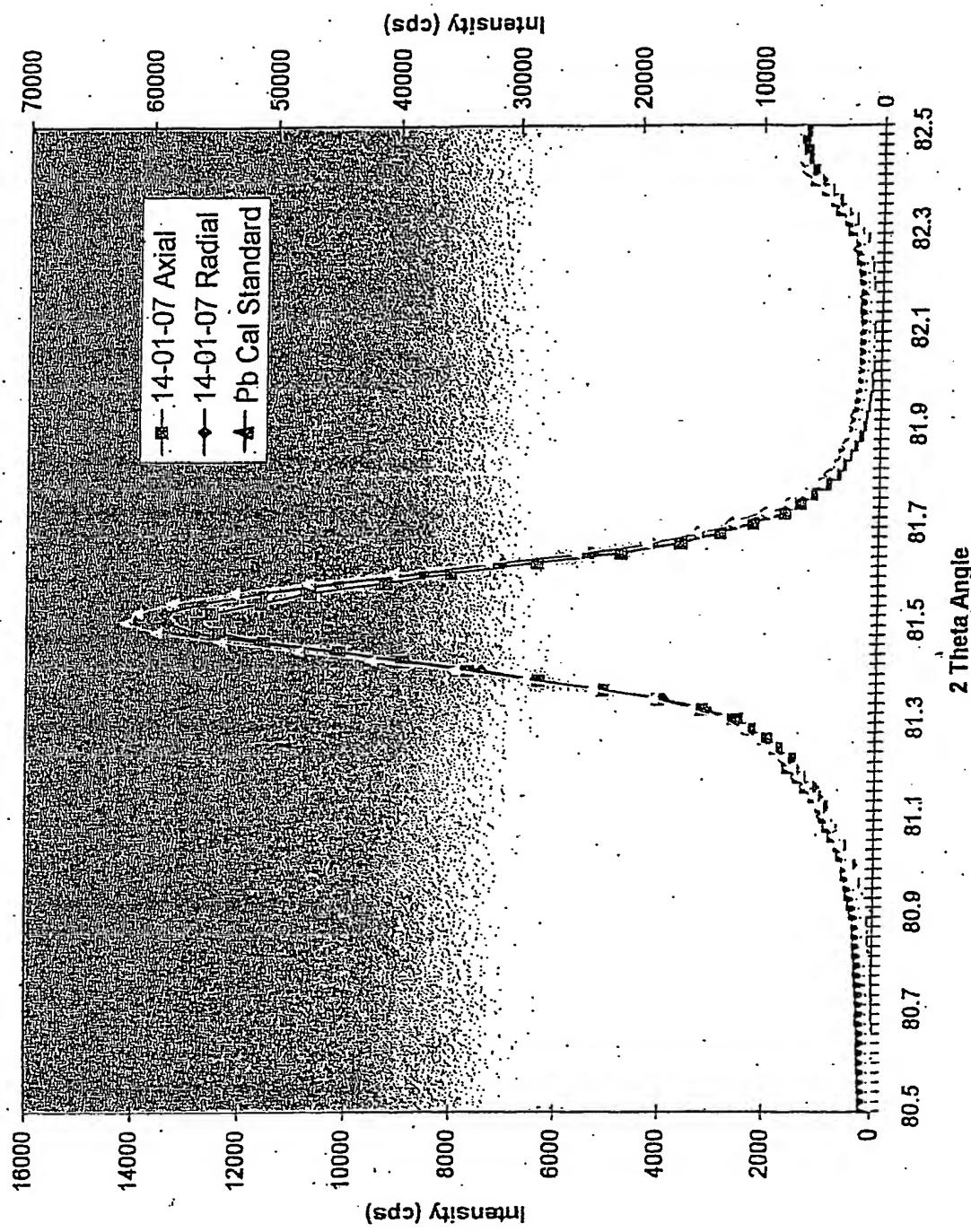


FIG. 40

14-01-08 scans for K

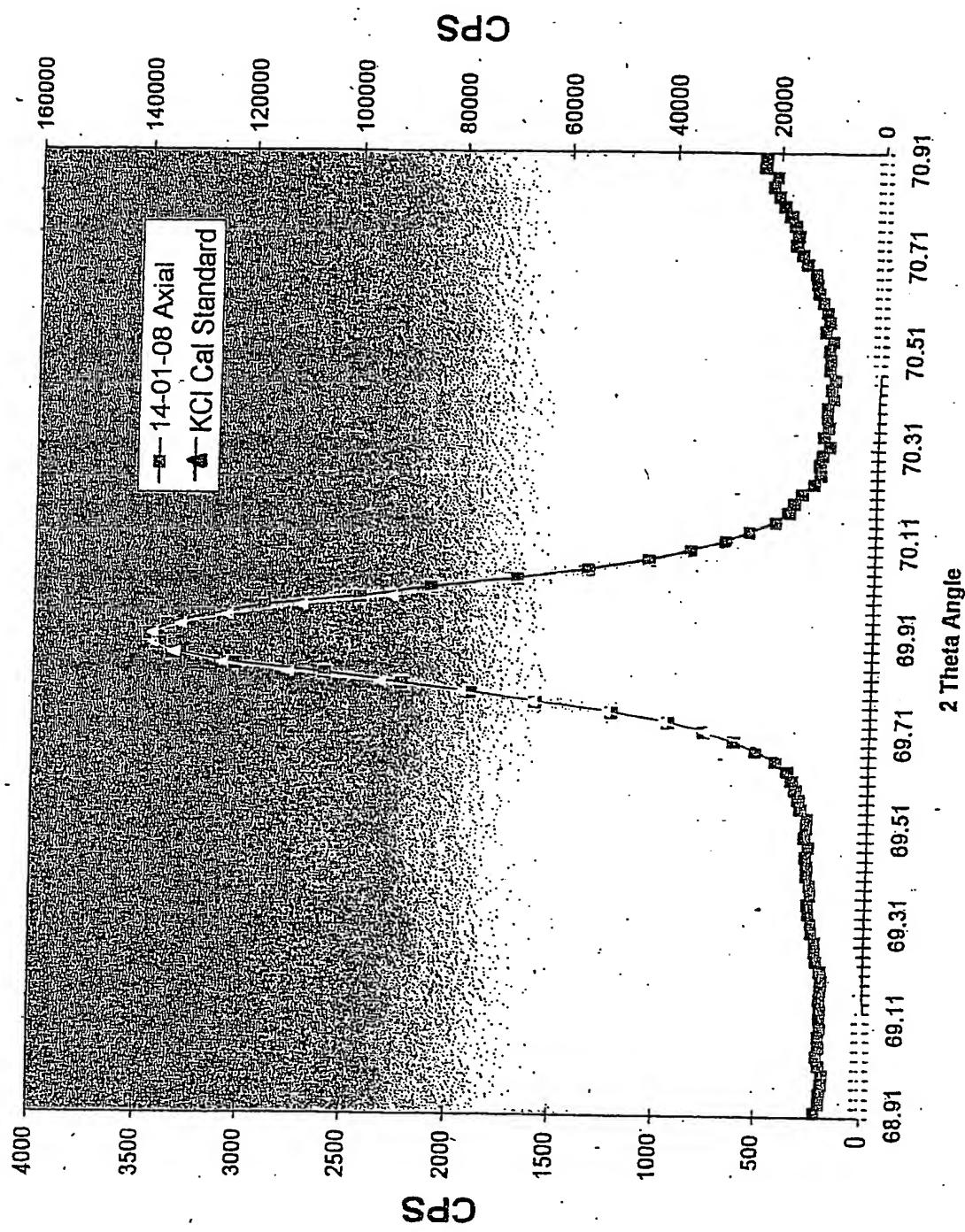


FIG. 41

14-01-08 Sn- Axial and Radial vs Sn Cal Standard

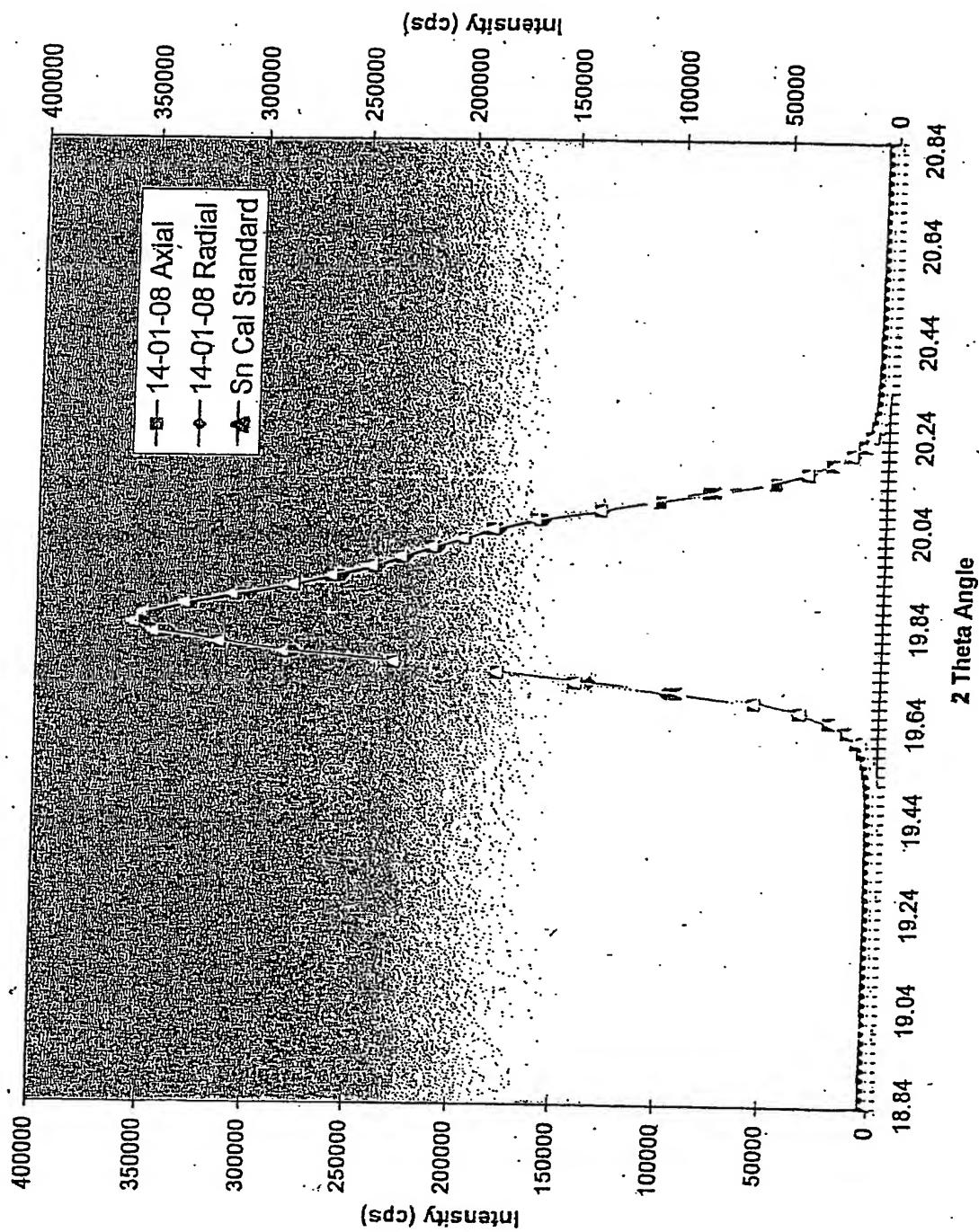


FIG. 42

14-01-08 Mg-Axial and Radial Samples vs MgO Cal Standard

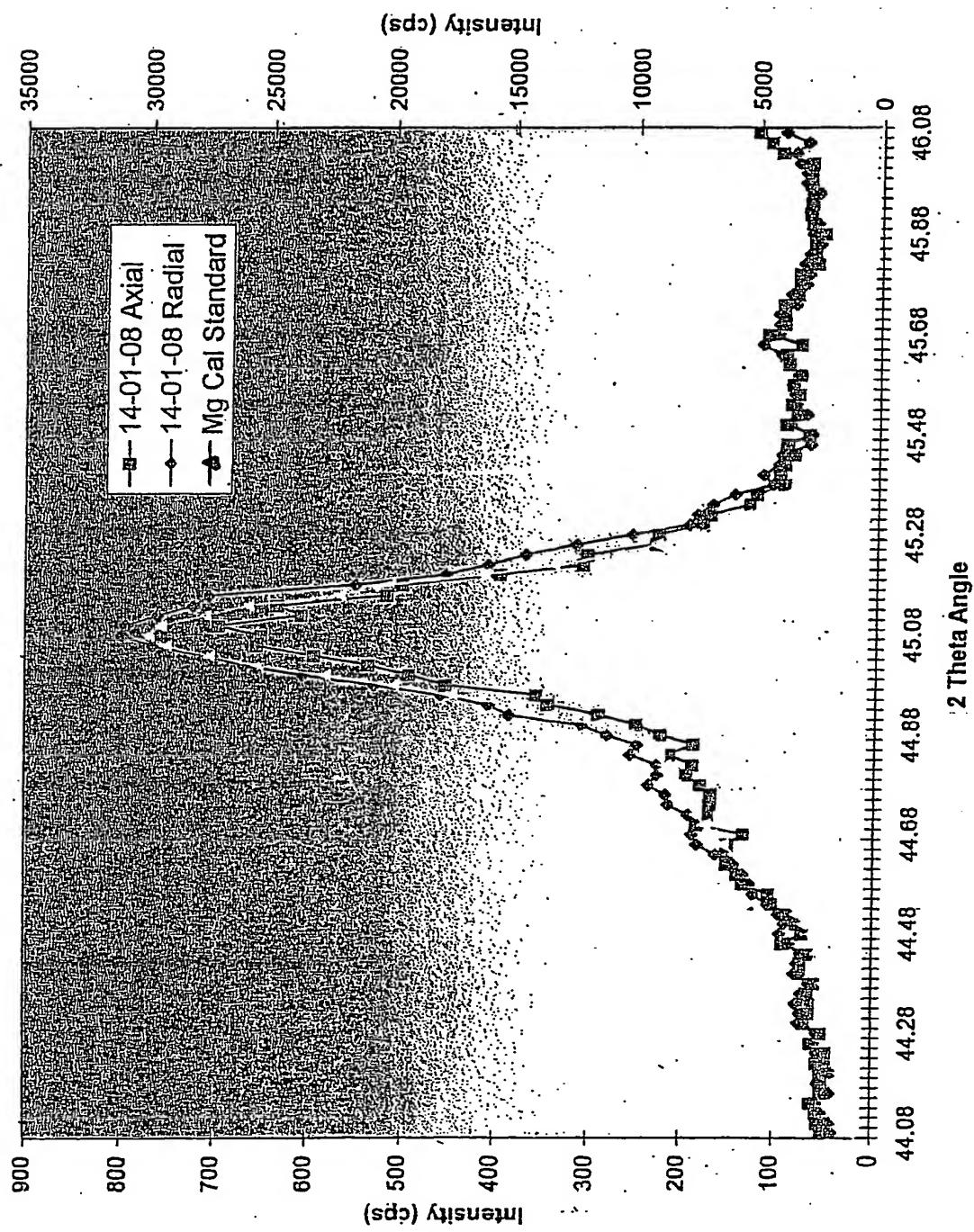


FIG. 43

14-01-08 Na-Axial and Radial Samples vs AlNa3F6 Cal Standard

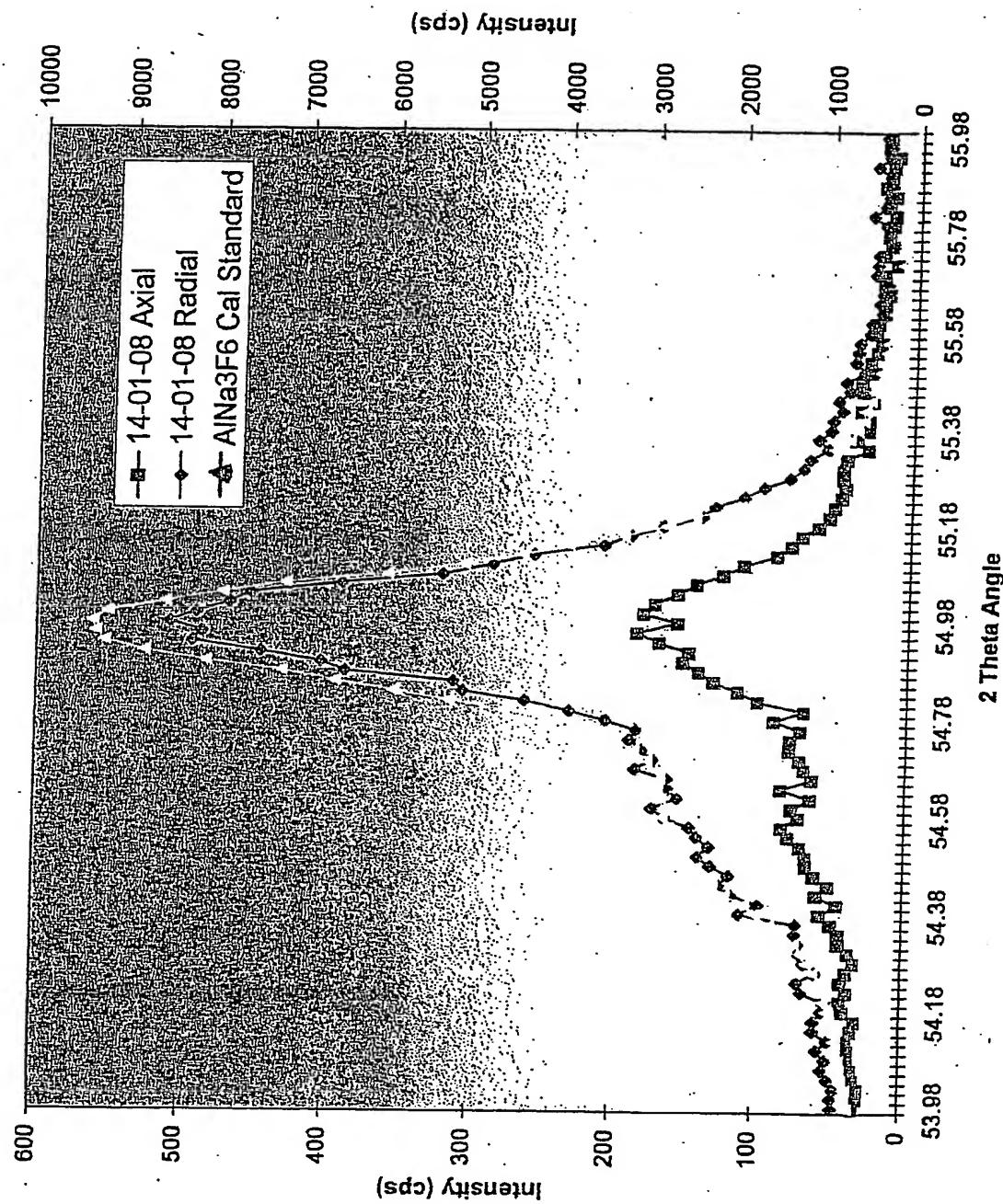
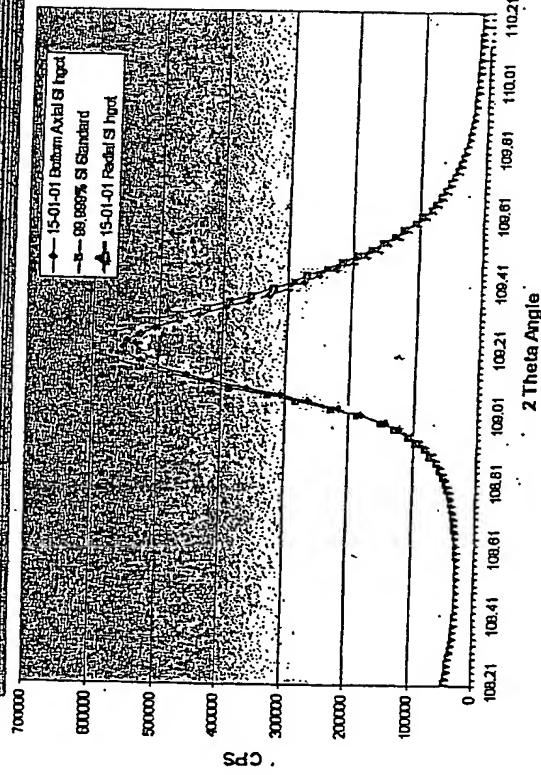
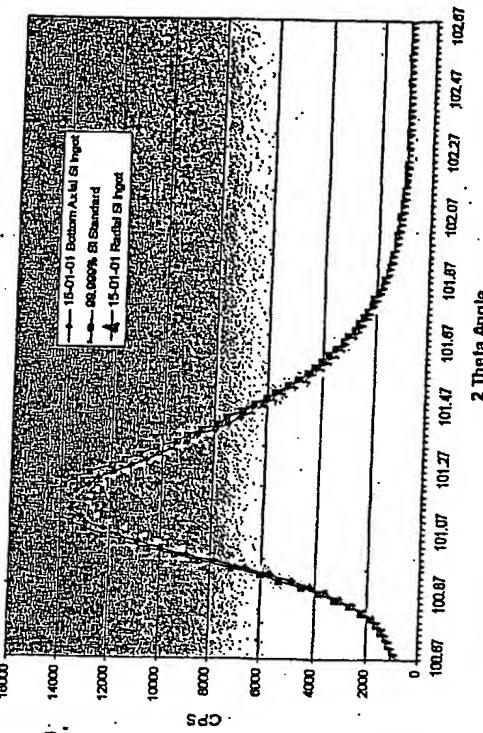


FIG. 44

# Silicon Scans: Silicon Analysis



$L_p$  Silicon Scans  
Run 15-01-01



$K_p$  Silicon Scans  
Run 15-01-01

FIG. 45A

FIG. 45B

# Silicon Scans: Al and Ti

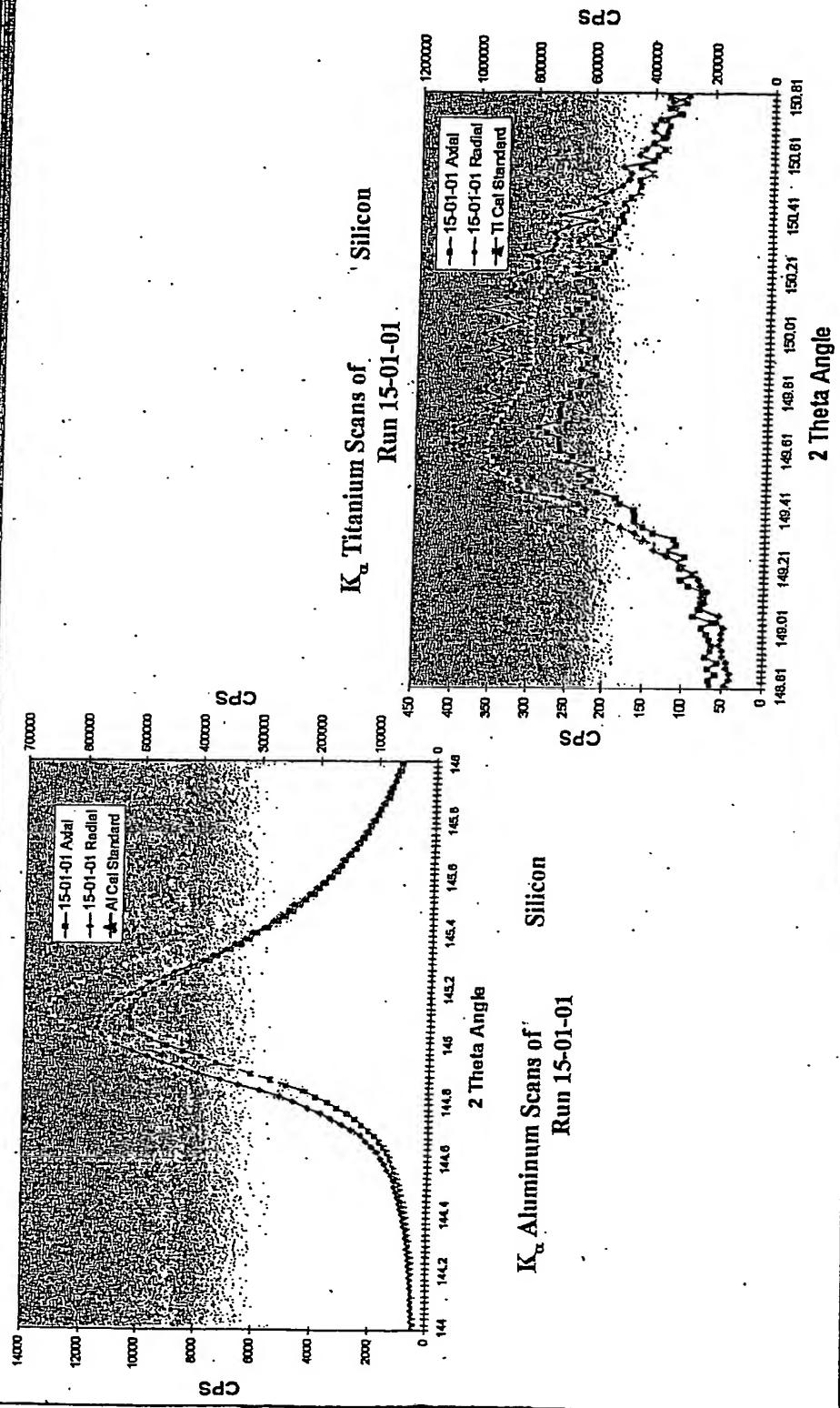


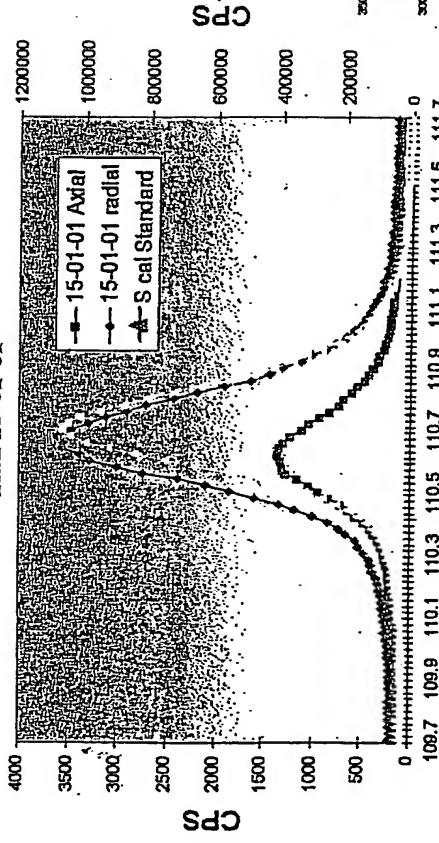
FIG. 46A

FIG. 46B

# Silicon Scans: S and Cl

$K_\alpha$  Sulfur Scans of Silicon

Run 15-01-01



$K_\alpha$  Chlorine Scans of Silicon

Run 15-01-01

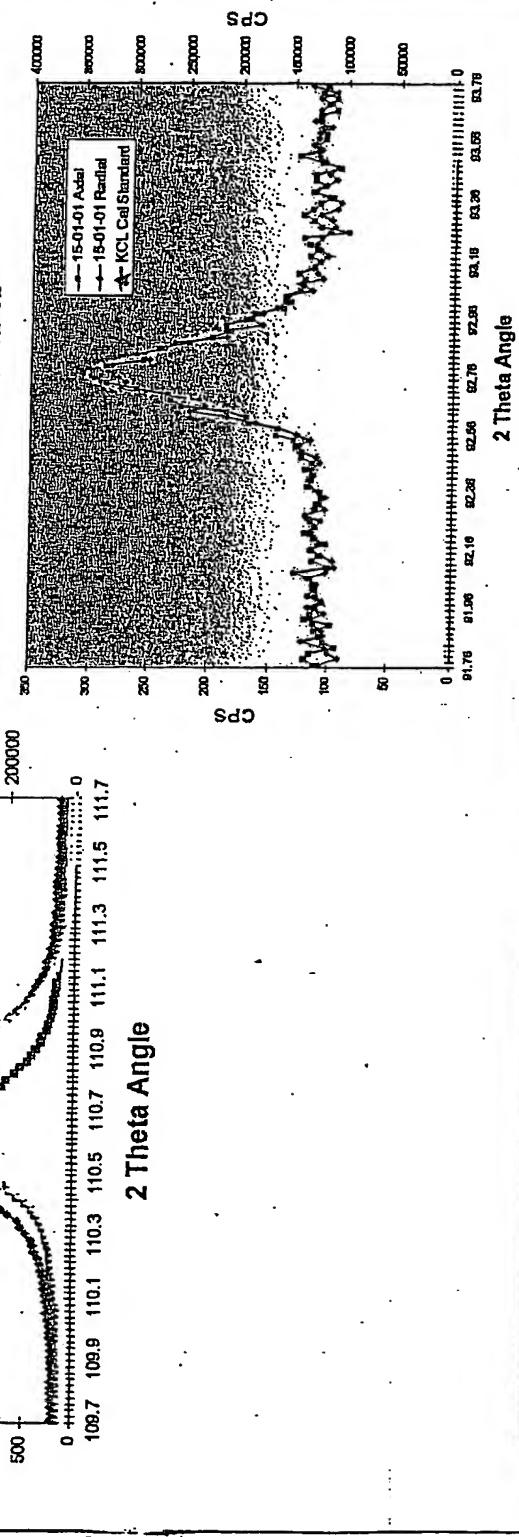


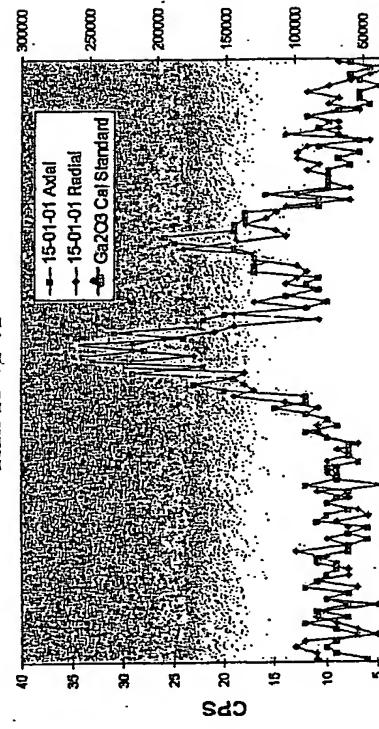
FIG. 47A

FIG. 47B

## Silicon Scans: Ga and K

K<sub>a</sub> Gallium Scans of Silicon

Run 15-01-01



K<sub>a</sub> Potassium Scans of Silicon

Run 15-01-01

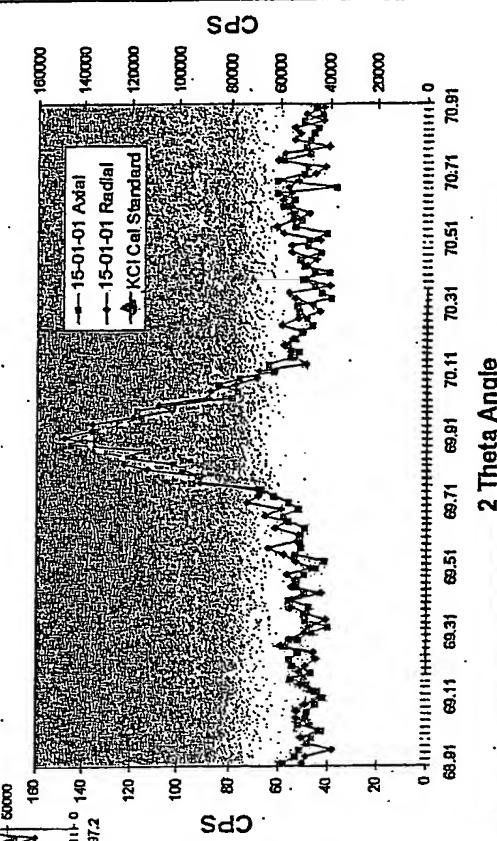
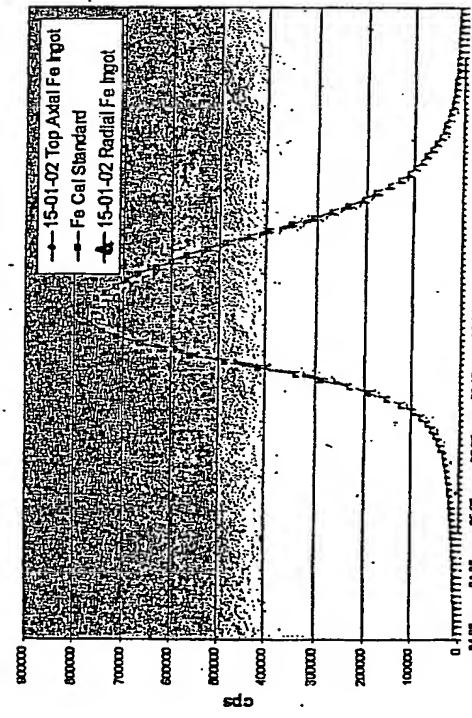


FIG. 48A

FIG. 48B

# Iron Scans: Iron Analysis



$K_{\alpha}$  Iron Scans of Iron Run 15-01-02

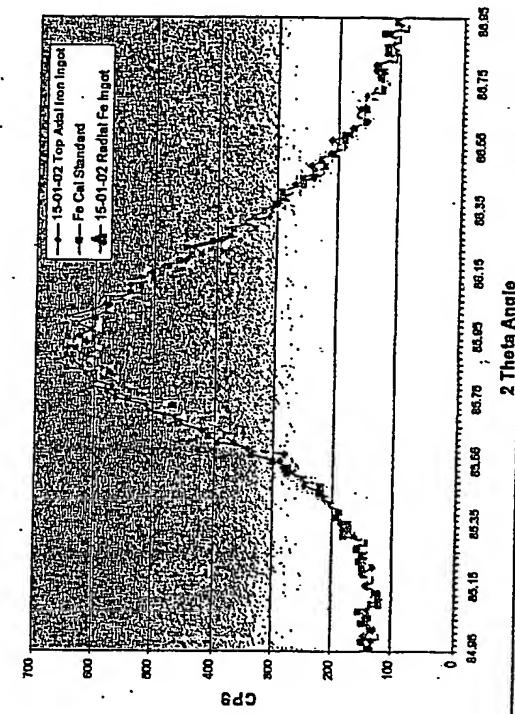


FIG. 49A

FIG. 49B

# Iron Scans: Al and Zr

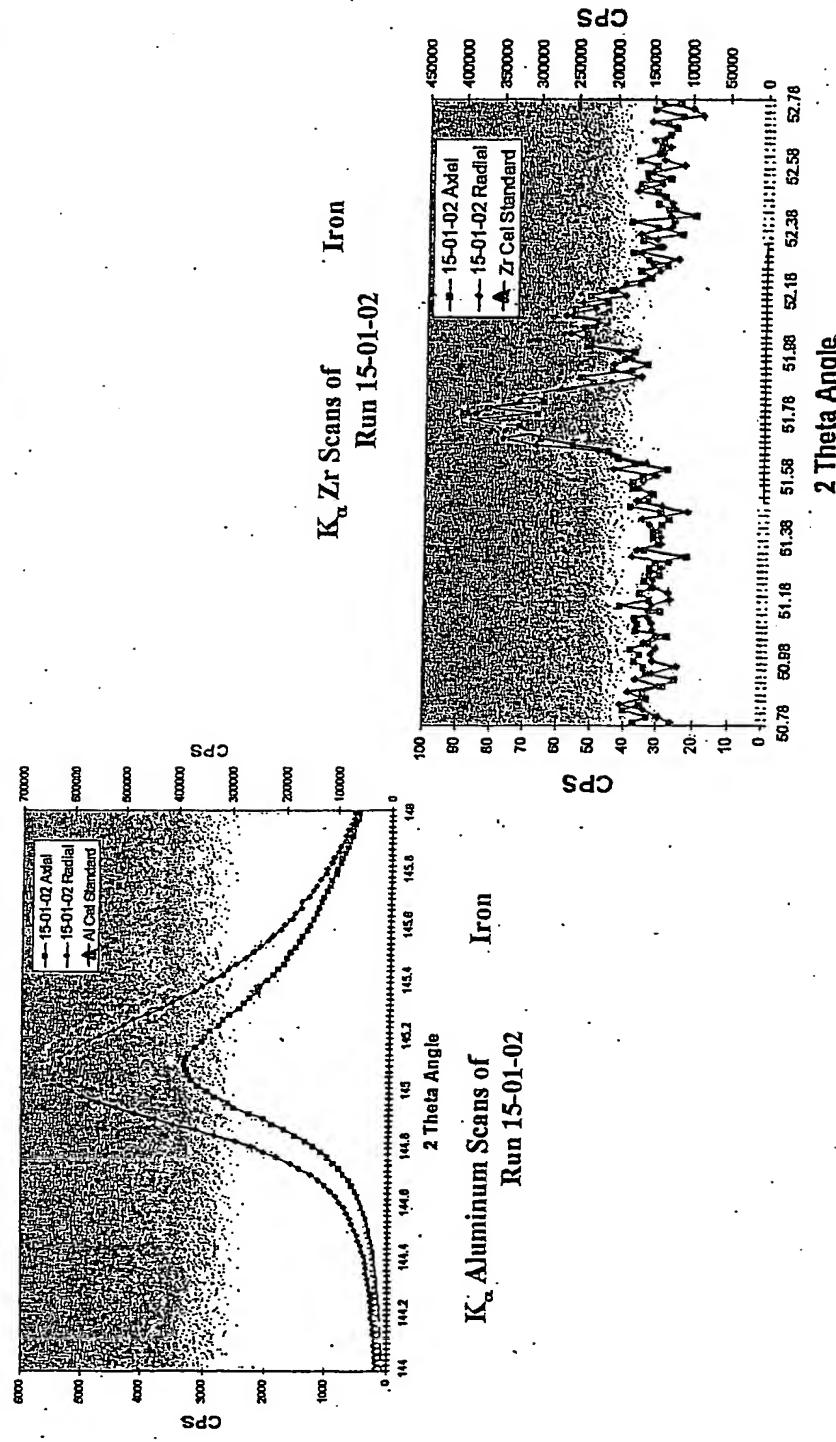
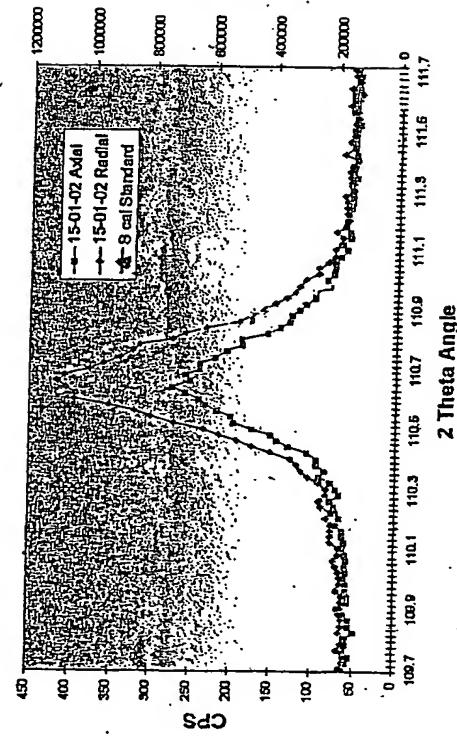


FIG. 50A

FIG. 50B

# Iron Scans: S and Cl

$K_{\alpha}$  Sulfur Scans of Iron  
Run 15-01-02



$K_{\alpha}$  Chlorine Scans of Iron  
Run 15-01-02

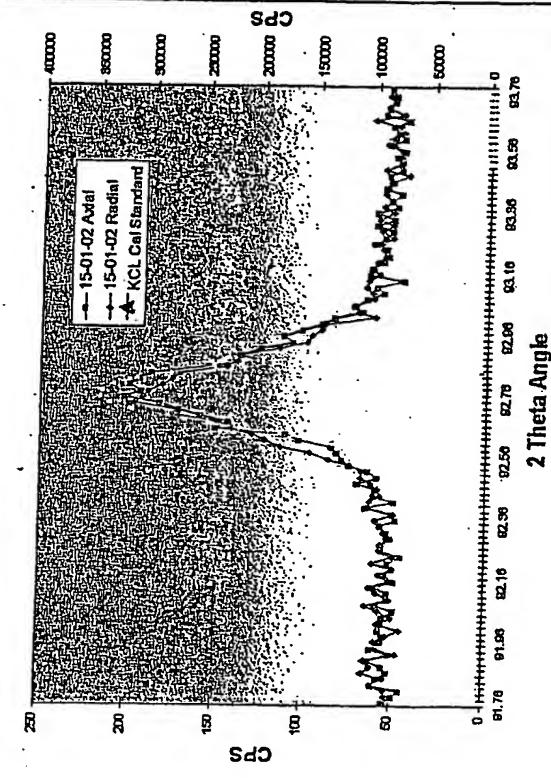


FIG. 51A

FIG. 51B

15-01-03 Cr- Axial and Radial Samples vs Cr<sub>2</sub>O<sub>3</sub> Cal Standard (LiF220/FPC)

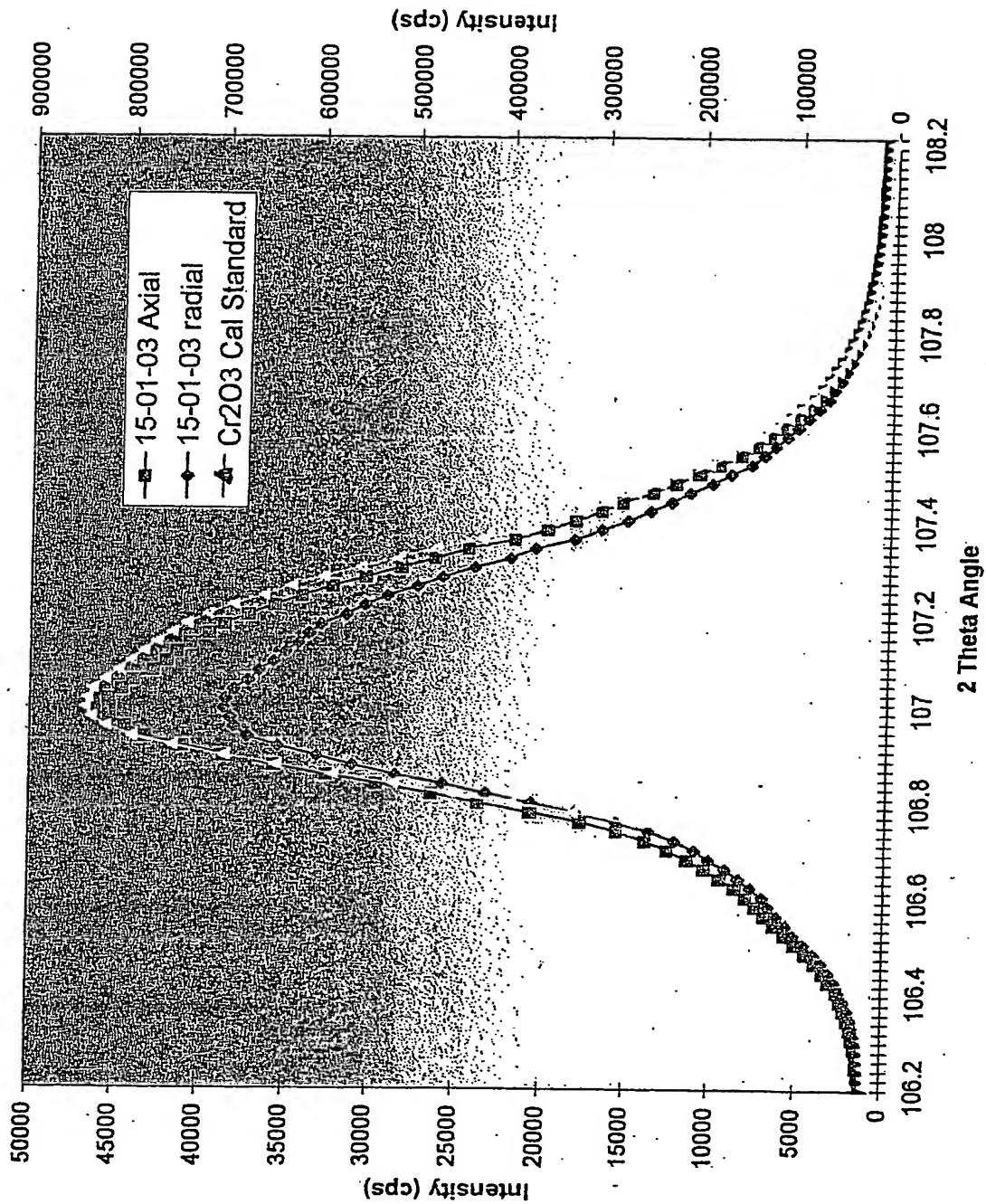


FIG. 52

15-01-03 Fe- Axial and Radial vs Fe Cal Standard (LiF220/FPC)

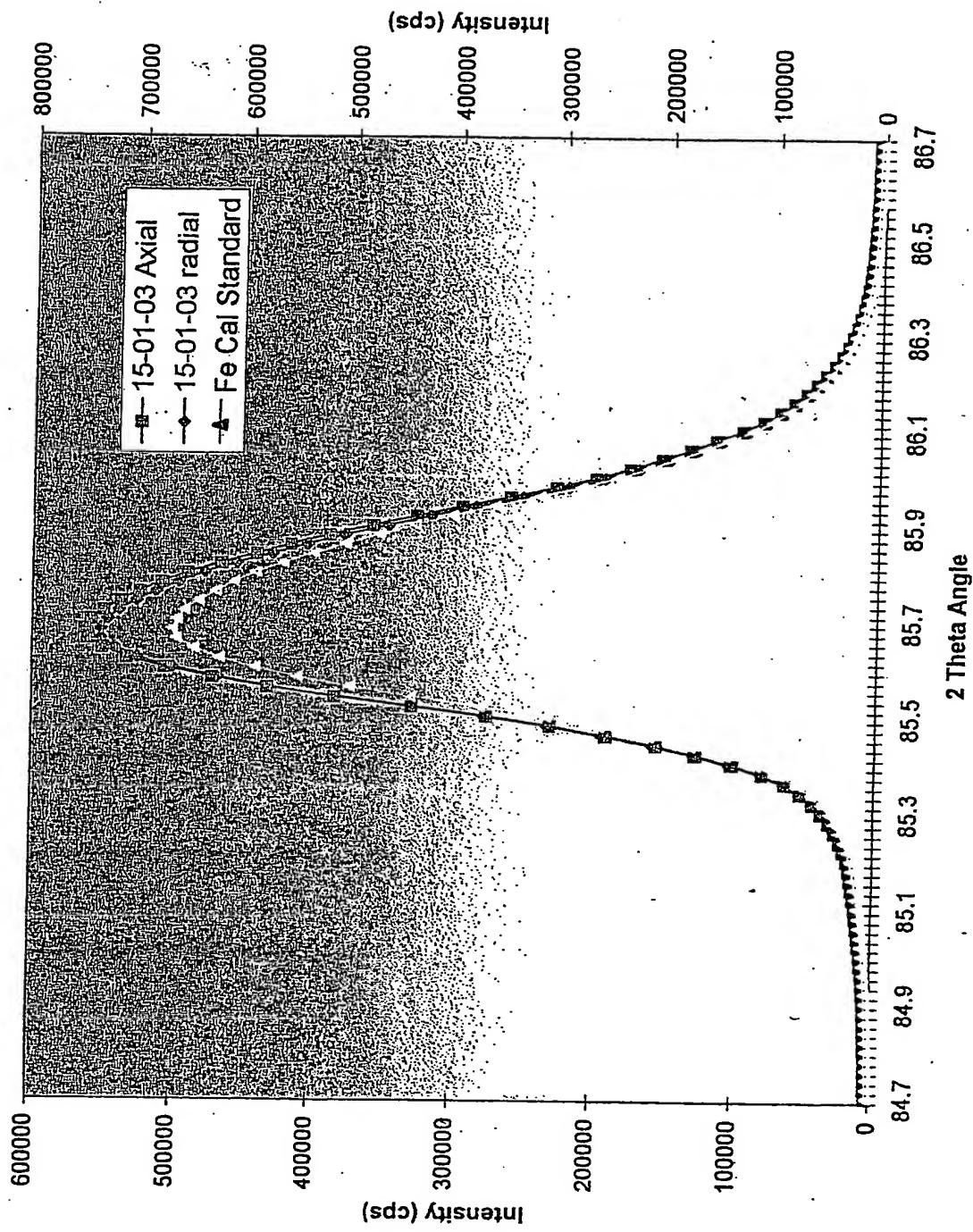


FIG. 53

15-01-03 V- axial and radial samples vs V cal standard (LiF220/FPC)

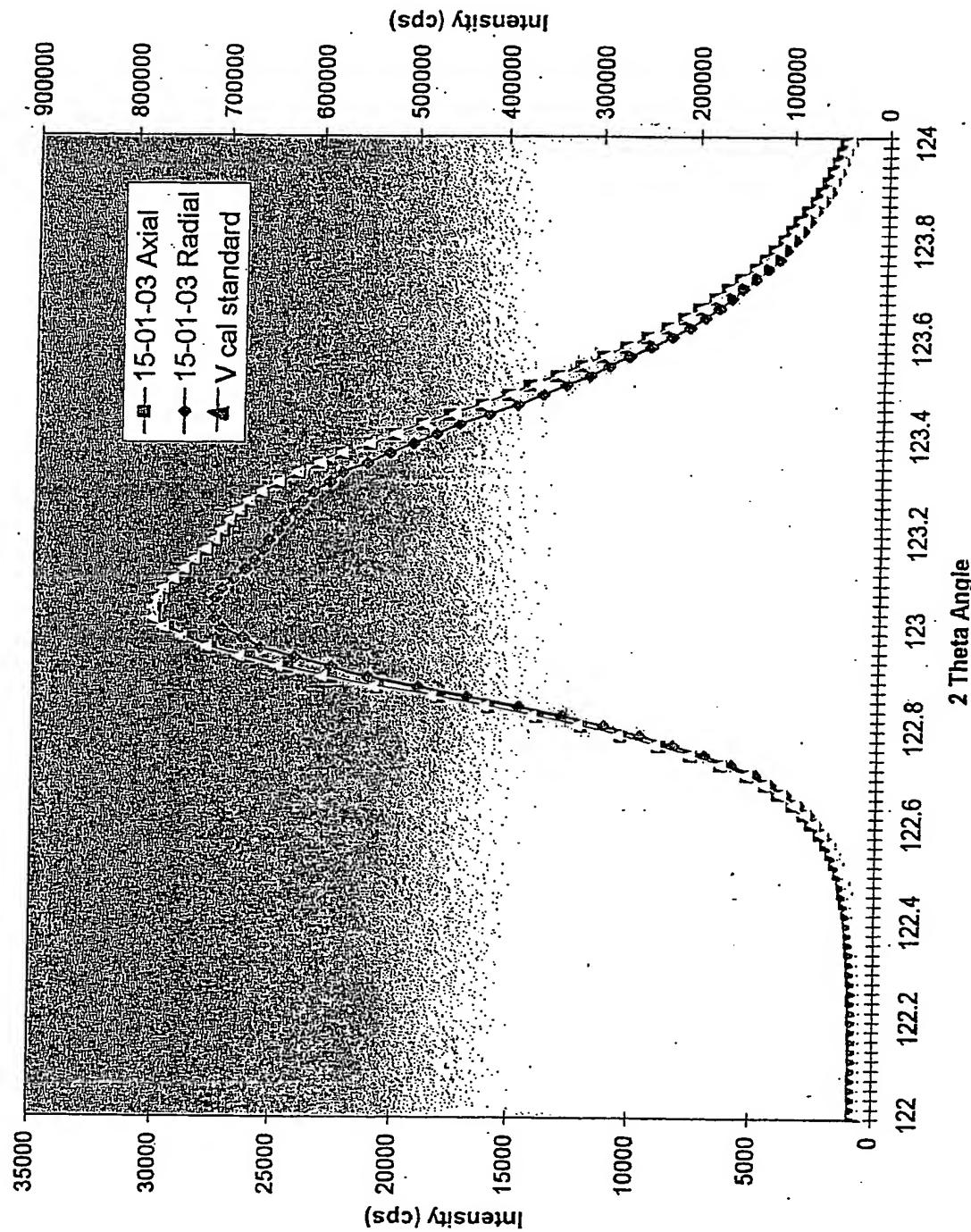


FIG. 54

15-01-03 Mn- Axial and Radial Sample vs Mn Cal Standard (LiF220/FPC)

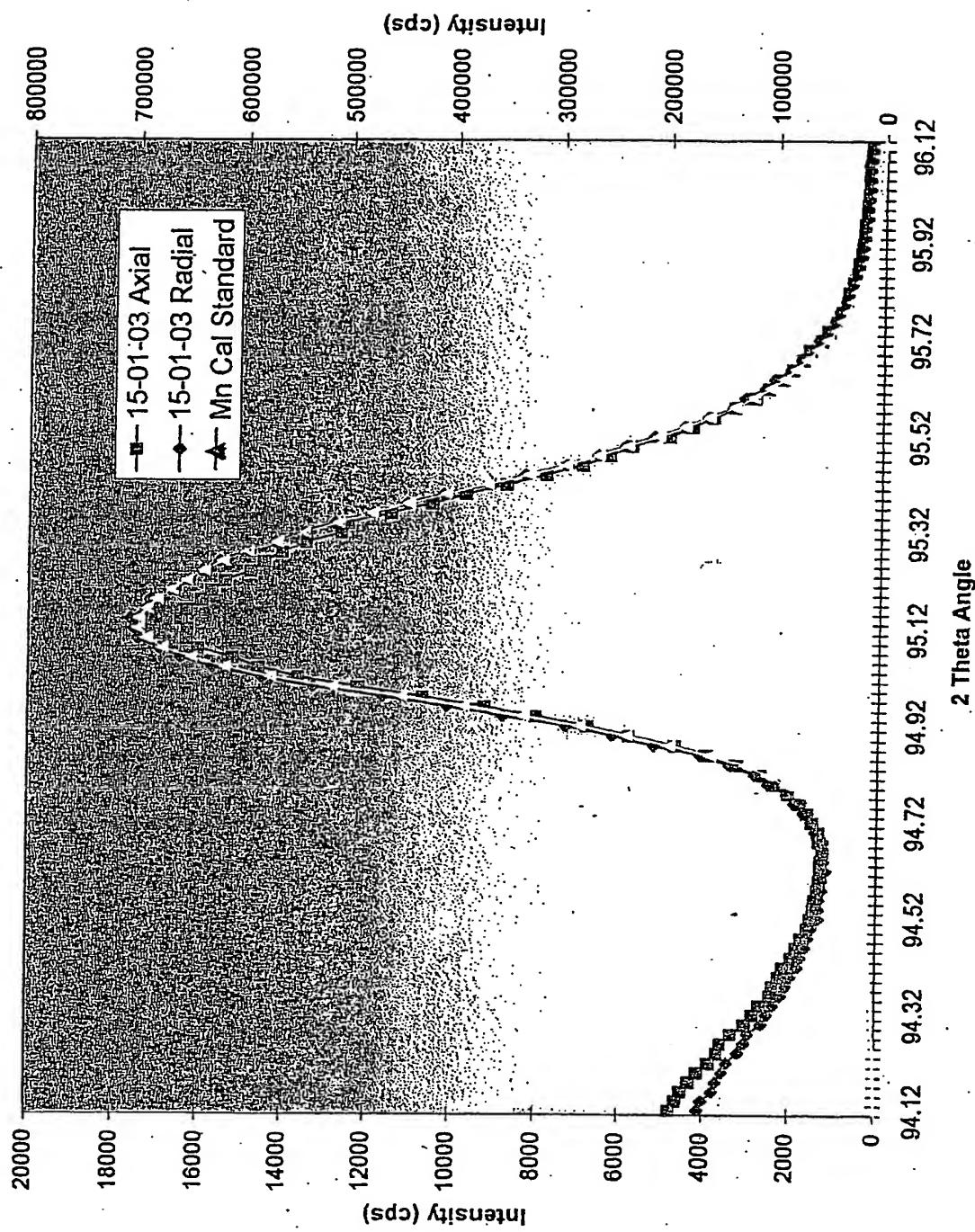


FIG. 55

15-01-03 Cube scans for Sulfur (6 Sides) Ge111/FPC

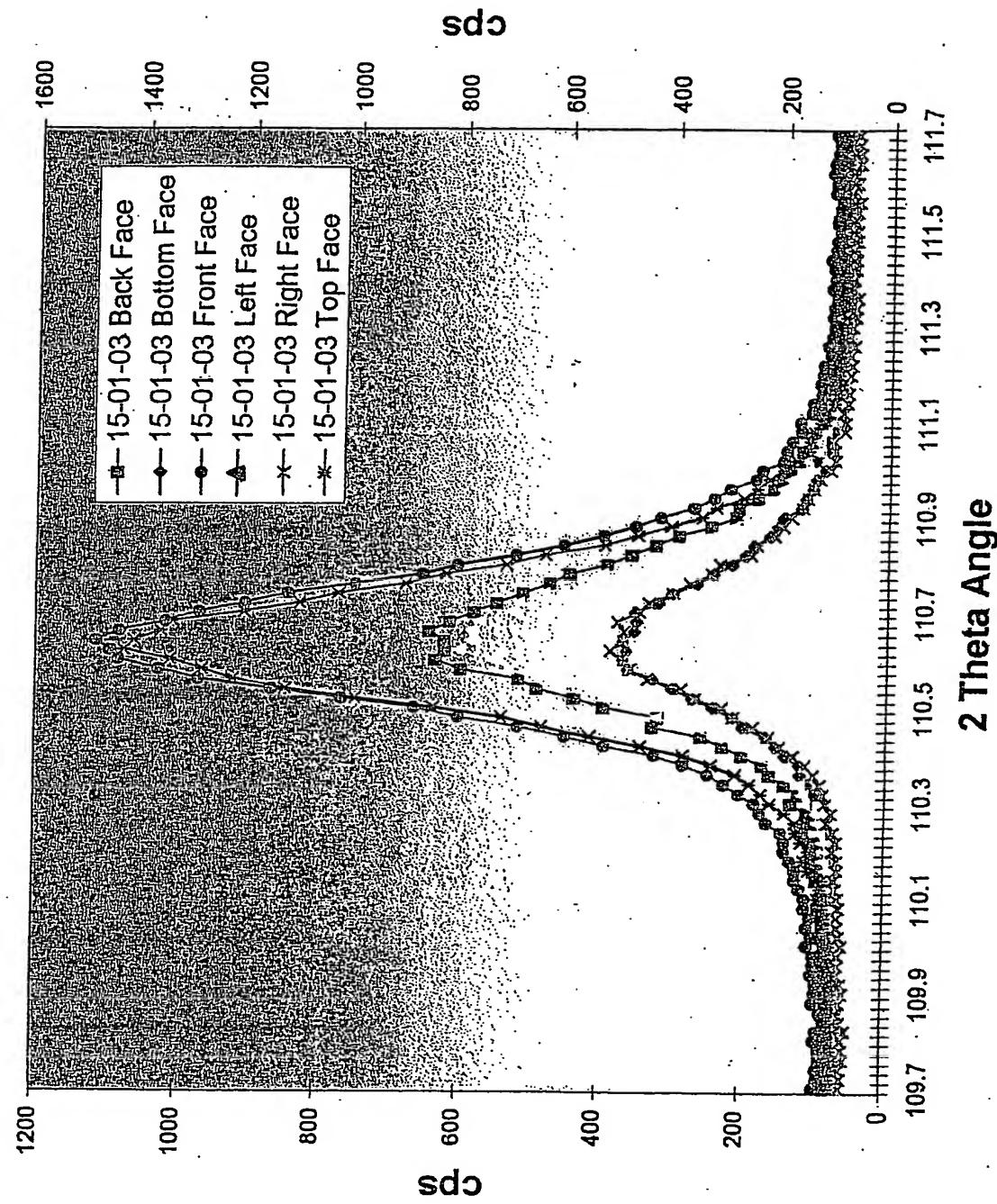


FIG. 56

15-01-04 Ta- Axial and Radial vs Ta Cal Standard

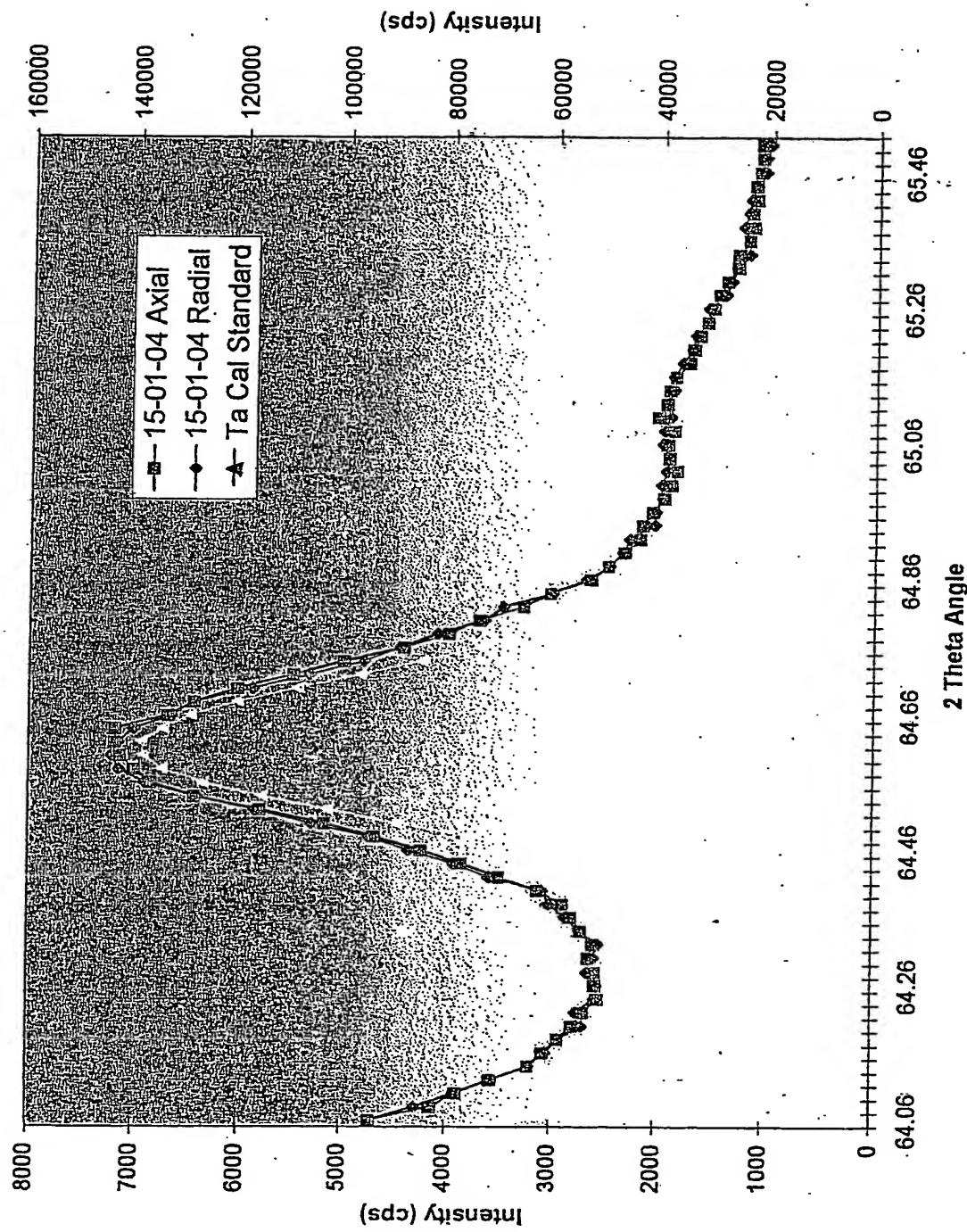


FIG. 57

15-01-04 W- Axial and Radial Samples vs W Cal Standard

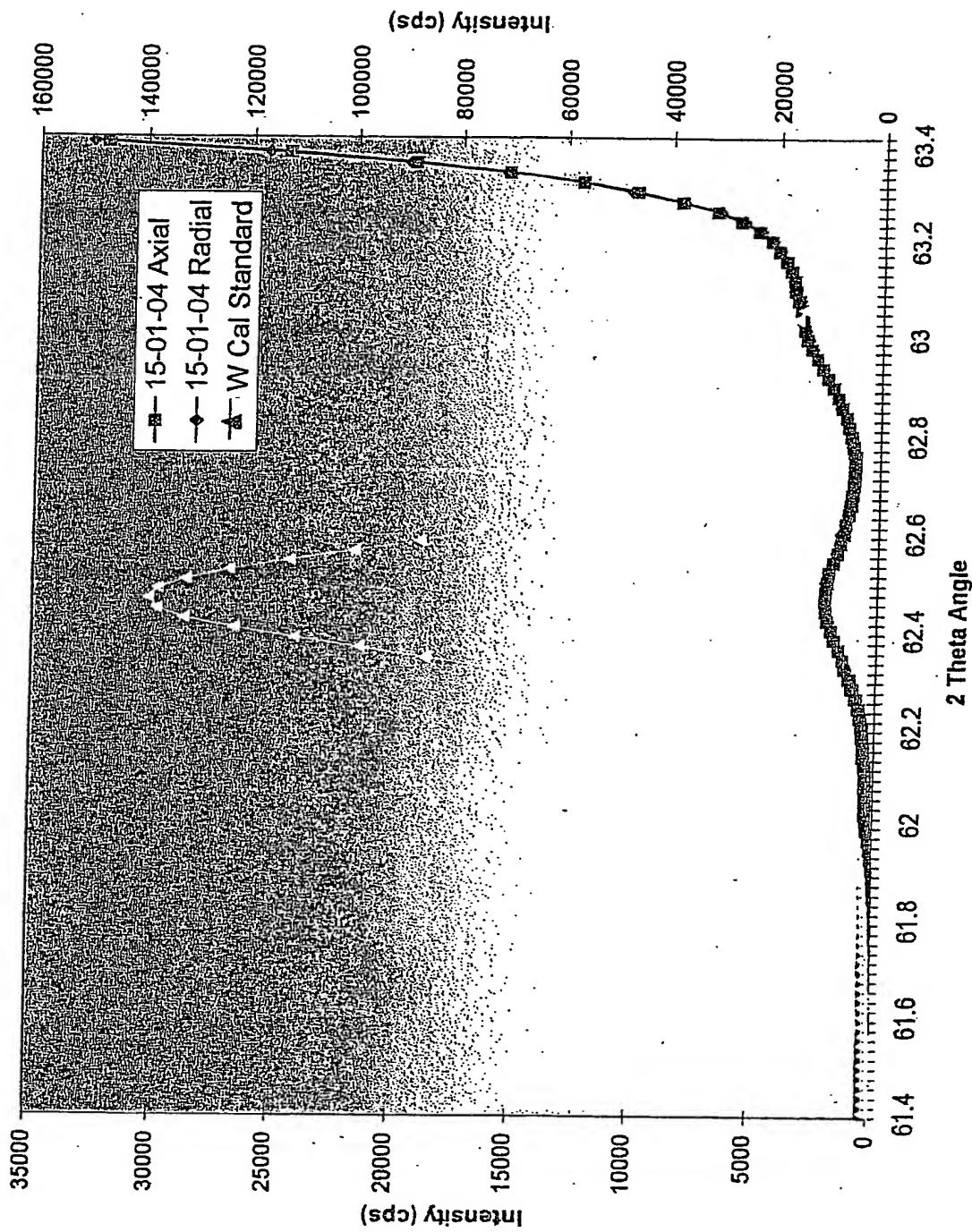


FIG. 58

15-01-04 Hf- Axial and Radial Samples vs Hf Cal Standard (LiF420/SC)

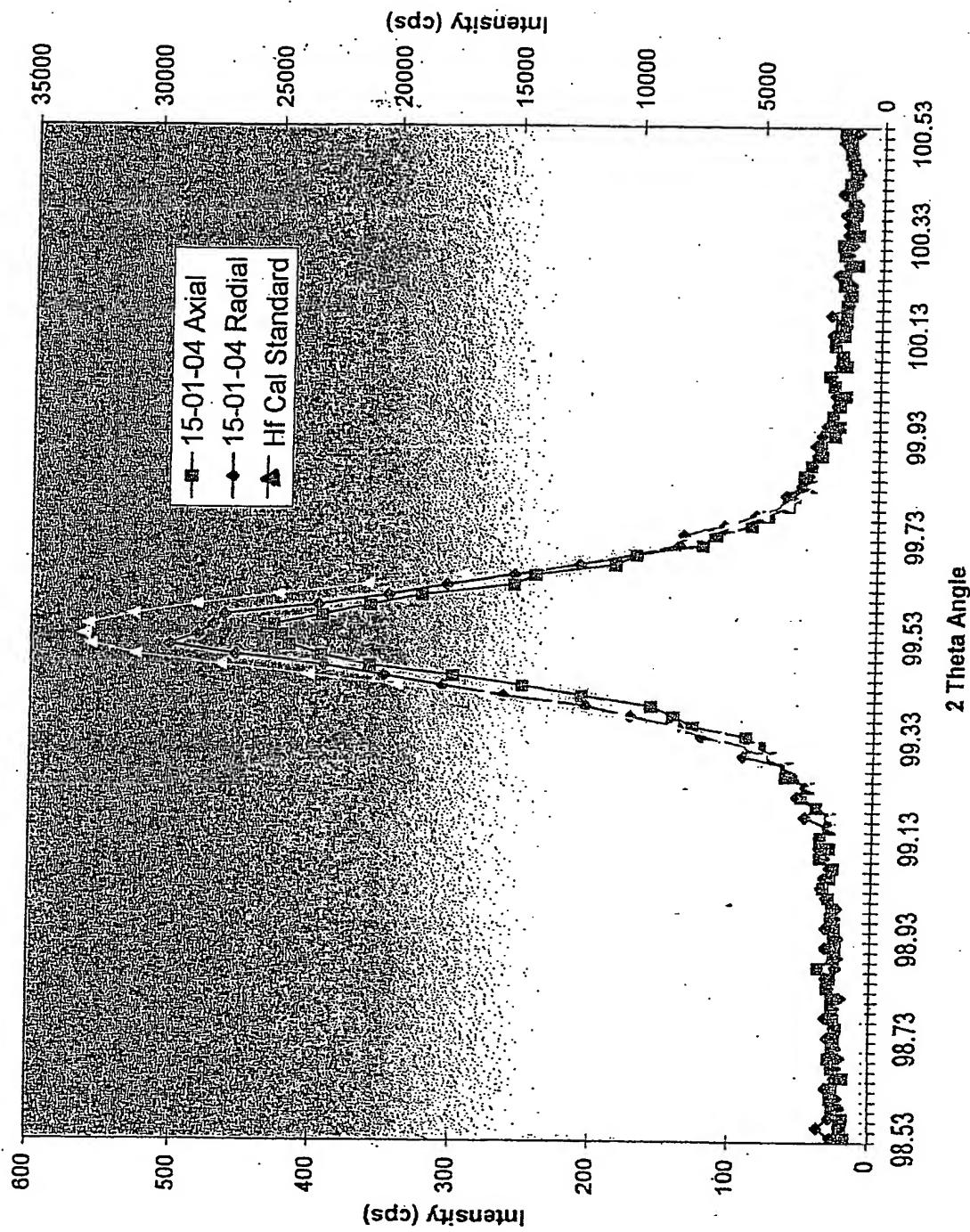


FIG. 59

XRF Scans for Sulfur (Ge111/FPC)  
15-01-04 Ni/Hf/W/Ta Ingot

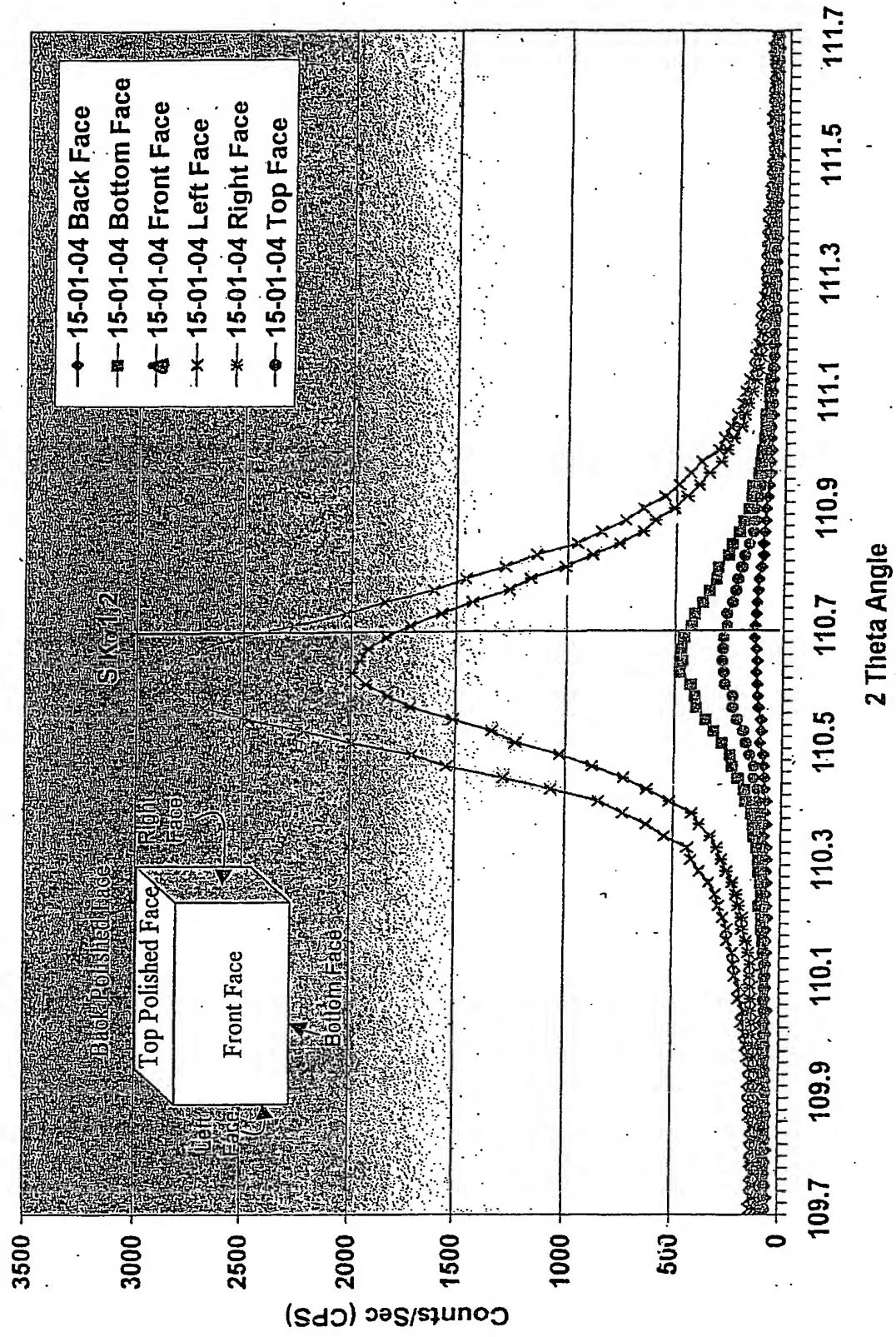


FIG. 60

15-01-04 Ni- Axial and Radial vs Ni Cal Standard (LiF220/FPC)

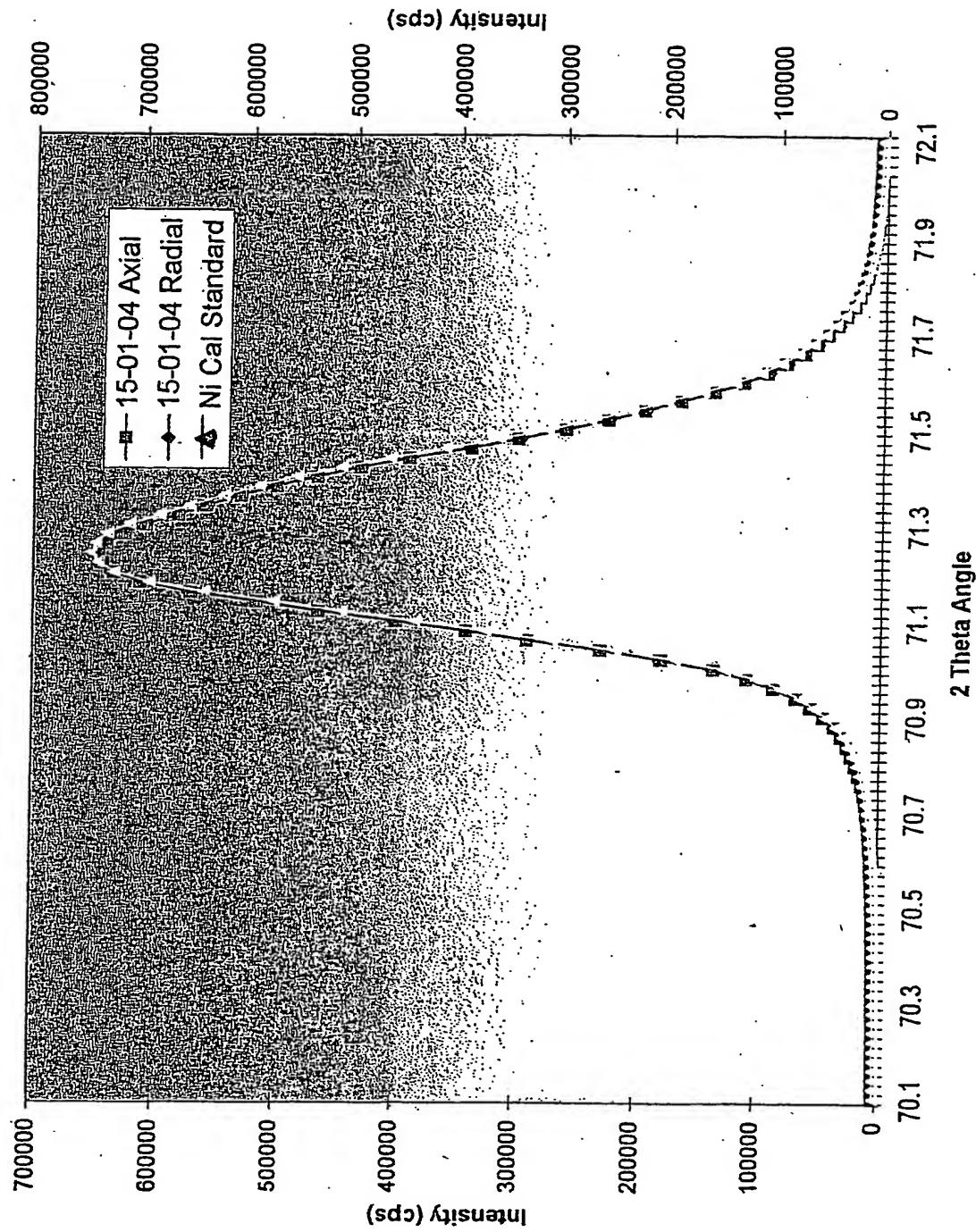
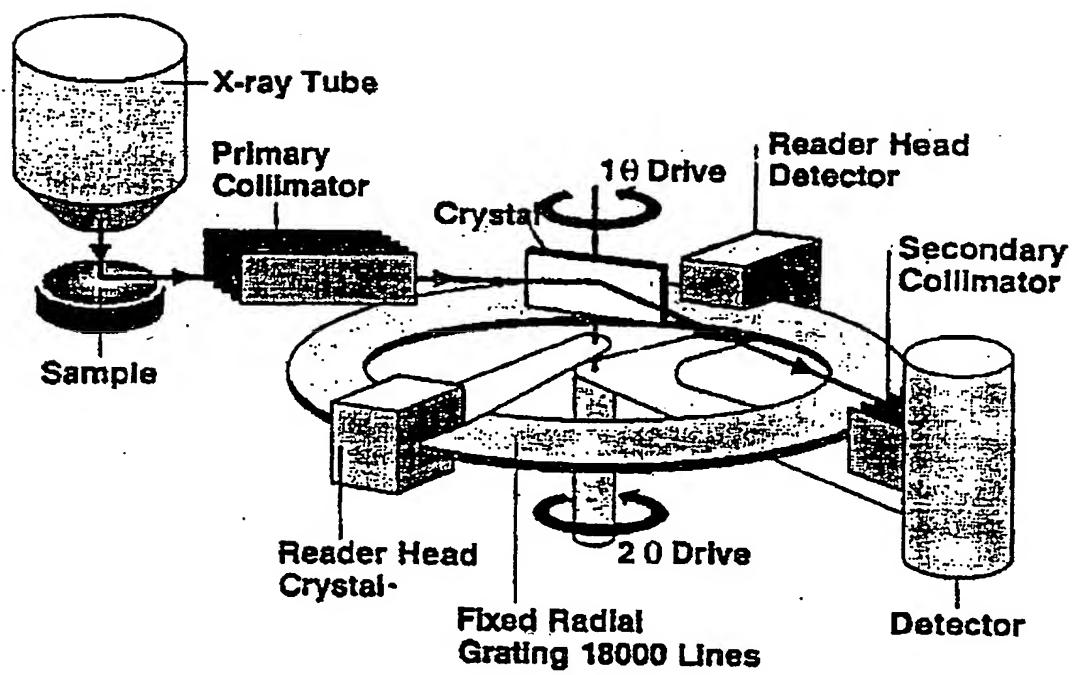


FIG. 61



Schematic layout of ARL 8410 sequential XRF.

FIG. 62